



ЦЕНТР ДАННЫХ ФОТОЯДЕРНЫХ ЭКСПЕРИМЕНТОВ

# ФОТОЯДЕРНЫЕ ДААННЫЕ

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НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ ЯДЕРНОЙ ФИЗИКИ  
ЦЕНТР ДАННЫХ ФОТОЯДЕРНЫХ ЭКСПЕРИМЕНТОВ

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Настоящий информационный бюллетень включает в себя сведения об экспериментальных работах, посвященных исследованию фотоядерных процессов в атомных ядрах и опубликованных в 1988 году в периодической научной литературе.

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I. ПРЕДИСЛОВИЕ

PREFACE

Настоящий информационный бюллетень является продолжением бюллетеней N 1-11, опубликованных ранее.

The present information bulletin is the continuation of bulletins No. 1-11 which have been published previously.

Бюллетень N 12 включает в себя таблицу фотоядерных данных, в которой систематизированы результаты экспериментальных исследований, опубликованных в 1988 году, библиографии работ и авторский указатель.

The bulletin No. 12 includes the table of photonuclear data, in which the results of the experimental studies published in 1988 are systematized, bibliography of papers and author index.

При подготовке информационного бюллетеня N 12 были использованы указанные советские и иностранные журналы.

In the preparation of information bulletin No. 12 the following soviet and foreign journals have been used.

1. Ядерная физика
2. Изв. АН СССР. Сер. физическая
3. Изв. АН Каз. ССР. Сер. физико-математическая
4. Изв. АН Лат. ССР. Сер. физических и технических наук
5. Письма в ЖЭТФ
6. Атомная энергия
7. Вестн. Моск. ун-та. Сер.: Физика. Астрономия
8. Известия высших учебных заведений. Сер.: Физика
9. Украинский физический журнал
10. Сб. "Проблемы ядерной физики и космических лучей". Харьков
11. Сб. "Вопросы атомной науки и техники. Сер.: Общая и ядерная физика". Москва
12. Сб. "Вопросы атомной науки и техники. Сер.: Ядерные константы". Москва
13. Nuclear Physics, A
14. Physical Letters, B
15. Physical Review, C
16. Physical Review Letters
17. Zeitschrift fur Physik, A
18. Canadian Journal of Physics
19. Australian Journal of Physics
20. Journal of Physical Society of Japan
21. Journal of Physics G: Nuclear Physics
22. Nuclear Instruments and Methods
23. Il Nuovo Cimento
24. Nuclear Science and Engineering

Дополнительно настоящий бюллетень содержит библиографию работ по теме "Электромагнитные взаимодействия ядер и смежные области" - результат соответствующего телекоммуникационного поиска в зарубежных базах данных, проведенного в течение 1988 года с использованием возможностей ВНИИ прикладных автоматизированных систем.

Additionally the present bulletin includes the bibliography of the works on the theme "Electromagnetic Interaction of Nuclei and Related Topics" - the result of the telecommunicational search in foreign data bases carried out during the 1988 using the possibilities of the Institute for Automatized Systems.

## II. ПОЯСНЕНИЯ К ТАБЛИЦЕ

## EXPLANATIONS OF THE TABLE

В таблицу "ФОТОЯДЕРНЫЕ ДАННЫЕ" включены сведения о работах, содержащих информацию об электромагнитных возбуждениях в атомных ядрах, кроме результатов исследования процессов радиационного захвата тепловых нейтронов, имеющих весьма специфическую природу.

Table "PHOTONUCLEAR DATA" contains information about the electromagnetic excitations in atomic nuclei with the exception of the results of studies of the thermal neutrons radiative capture processes, which are of highly specific nature.

Включенные в таблицу экспериментальные результаты относятся, в основном, к области энергий возбуждения, заключенной между нуклонным и мезонным порогами.

The experimental results included here refer as a rule to the excitation energy region between the nucleon and meson thresholds.

Экспериментальная информация в таблице приводится, как правило, отдельно для каждого из исследованных ядер, расположенных в порядке возрастания атомного номера элемента.

Experimental information is given as a rule separately for each of the studied nuclei in the order of increasing atomic number of the element.

Термины, обозначающие графы таблицы, имеют следующее содержание:

The terms designating the columns of the table are as follows:

"NUCLEUS"- символ элемента с указанием массового числа ( в случае использования мишени из естественной смеси изотопов указывается символ "0");

"NUCLEUS"- is the element symbol with the mass number indicated, when a target made of mixture of isotopes is used, the symbol "0" is indicated;

"REACTION"- 1 строка - символ реакции вне зависимости от способа ее исследования и исследованного канала (указано далее); реакция радиационного захвата обозначается (P,G), (A,G) и так далее, несмотря на то, что в большинстве случаев речь идет лишь о канале образования конечного ядра в основном состоянии; 2 строка - символы характеристик налетающих и вылетающих частиц; MON - (квази) монохроматичность, POL-поляризация;

"REACTION"- 1 line - is a symbol of reaction regardless the method of its investigation (indicated later); the radiative capture reactions are designated as (P,G), (A,G), and so forth, despite the fact that it is only the channel of formation of the final nucleus in the ground state that is discussed in most cases; 2 line - a symbols of characteristics of incident and outgoing particles; MON - (quasi) monochromativity; POL-polarization;

"FINAL/TARGET"

FN - символ элемента с указанием заряда и массового числа конечного ядра реакции фото- и электро-возбуждения; TN - в случае обратной реакции радиационного захвата указывается ядро - мишень;

"FINAL/TARGET"

FN - is the element symbol with charge and mass numbers indicated the final nucleus of the photo- and electroexcitation reaction; TN - in the case of the inverse reaction of radiative capture the target nucleus is indicated;

"ENERGY"- EN - энергия или область энергий возбуждения (в MEV) ; для реакций с электронами и для реакций радиационного захвата в ряде случаев приводятся энергии или области энергий налетающих частиц (при этом дается символ налетающей частицы, например, в случае реакций с электронами - EN-E);

"ENERGY"-

EN - is the excitation energy or the energy region (in MEV); for the reactions induced by electron and for radiative capture sometimes the energies or energy range of incident particles is indicated (then the incident particle is denoted by a symbol of incident particle, e.g. for reactions induced by electrons - EN-E);

"ANGLE"- значения или диапазоны углов (в

"ANGLE"- are the values or ranges of the



градусах), для которых проводились измерения;

angles (in degrees) at which measurements were made;

"QUANTITY"- коды основных результатов выполненных измерений и изложение информации, извлекаемой и (или) обсуждаемой авторами (упоминаются лишь фактические результаты, приводимые в работах в виде рисунков, таблиц или числовых значений: М-измерено; D-получено; R-обзор)

"QUANTITY"- are a codes of the main results of the measurements made and the description of information extracted and (or) discussed by the authors (only the factual results given in papers as diagrams, tables, or digital values are mentioned; M-measured, D-deduced, R-reviewed;

"NUMBER"- пятисимвольный идентификатор соответствующей работы в библиографии, образованный по принципу ГГННН и определяющий год (ГГ) опубликования работы и ее порядковый номер (ННН) в соответствующем информационном бюллетене.

"NUMBER"- is the file-digit number of the work in the bibliography, formed on the principle YNNNN and determining the year (YY) of publication of a work and its index number (NNN) in the corresponding information bulletin.

"E"- дополнительный условный символ, означающий наличие в фондах ЦДФЭ цифровых данных в формате EXFOR.

"E"- is an additional symbol signifying the presence in the CDFE fund of digital data in the EXFOR format.

Код	Code	Содержание	Contents
A		альфа-частица	alfa-particle
ABI		абсолютное значение интегрального сечения	absolute integrated cross section
ABS		поглощение	absorption
ABX		абсолютное значение сечения	absolute cross section
ABY		абсолютное значение выхода	absolute yield
ANIS		анизотропия (углового распределения)	anisotropy (of angular distribution)
ASYM		асимметрия	asymmetry
AVLSP		среднее расстояние между уровнями	average level spacing
A-MOM		угловой момент	angular momentum
A-POW		анализирующая способность	analizing power
BRANCH		коэффициент ветвления	branching ratio
B(EL)		приведенная вероятность перехода	reduced transition probability
CDENS		зарядовая плотность	charge density
CDIS		зарядовое распределение	charge distribution
COINS		совпадения	coincidences
CORR		корреляция (по энергии)	correlation (energy)
D		дейтрон	deuteron
D:		полученные данные	data deduced
DEF		параметр деформации	deformation parameter
DNY		выход запаздывающих нейтронов	delayed neutron yield
DST		(угловое) распределение	(angular) distribution
E		электрон	electron
E		энергия (уровня)	energy (of level)
EN		энергия возбуждения исследуемого ядра	excitation energy of nucleus investigated

EN-A	энергия налетающей	energy of incident
EN-D	частицы (A,D,E,N,P,T)	particle (A,D,E,N,P,T)
EN-E		
EN-N		
EN-P		
EN-T		
ETOP	отношение (выходов или сечений) для реакций с электронами и позитронами	electron-to-positron ratio (of yields or cross sections)
F	деление	fission
FBAR	параметр барьера деления	fission barrier parameter
FBIL	делимость	fissionability
FMF	формфактор	form factor
FN:	конечное ядро	final nucleus
FPRB	вероятность деления	fission probability
FRRNG	пробег фрагментов деления	fission fragment range
G	гамма-квант	gamma-quantum
G-WIDHT	радиационная ширина	radiative width
INT	интенсивность (перехода)	intensity (of transition)
INTCFC	коэффициент интерференции	interference coefficient
IRAT	изомерное отношение	isomer ratio
ISCHR	изохромата	isochromate
ISY	выход изомера	isomer yield
ITOP	отношение (выходов или сечений) изомерного и мгновенного процессов	isomer-to-prompt ratio (of yields or cross sections)
IYR	отношение выходов изомеров	isomer yield ratio
J-PI	спин-четность (уровня)	spin-parity (of level)
KE	кинетическая энергия	kinetic energy
KF-DN	кинетическая функция запаздывающих нейтронов	kinetic function of delayed neutrons
LDEN	параметр плотности уровней	level density parameter
LFT	время жизни (уровня)	lifetime (of level)
LOSS	спектр энергетических потерь	energy loss spectrum
M:	измеренные величины	data measured
MATR	матричный элемент (перехода)	matrix element (of transition)
MD	распределение по угловым моментам	angular momentum distribution

MDIS	массовое распределение	mass distribution
MES	спектр недостающих энергий	missing energy spectrum
MFRP	средняя длина пробега	mean free path
MIX	коэффициент смешивания	mixing ratio
MLTPL	множественность	multiplisity
MON	монохроматичность (пучка фотонов)	monochromativity (of photon beam)
MTRN	переданный импульс	moment transfer
MULT	мультипольность	multipolarity
N	нейтрон	neutron
N-AV	среднее число (нейтронов)	average number (of neutrons)
NOX	отсутствие данных о сечении	no cross section data
OCPR	вероятность заселения	occupation probability
P	протон	proton
PNY	выход мгновенных нейтронов	prompt neutron yield
POL	поляризация	polarisation
PTOE	отношение (выходов или сечений) для реакций с фотонами и электронами	photon-to-electron ratio (of yields or cross sections)
PTON	отношение (выходов или сечений фото- и электро-расщепления) для протонов и нейтронов	proton-to-neutron ratio (of yields or cross sections for photo- and electrodisintegration)
Q	значение Q (реакции)	Q-value (of reaction)
QMDM	квадрупольный момент	quadrupole moment
R:	обсуждаемые данные	data reviewed
RDI	радиус (перехода)	radius (of transition)
RLI	относительное значение интегрального сечения	relative integrated cross section
RLX	относительное значение сечения	relative cross section
RLY	относительное значение выхода	relative yield
RMD	распределение по импульсам отдачи	recoil momentum distribution
RSP	функция отклика	response function
SCAM	амплитуда рассеяния	scattering amplitude
SEP	энергия отделения	separation energy

SIG	сечение (функция возбуждения)	cross section (excitation function)
SIG-0	сечение образования основного состояния	ground state cross section
SIG-1 SIG-2 SIG-3	сечения образования возбужденных состояний	excitation states cross sections
SIG-M	сечение образования метастабильного (изомерного) состояния	metastable (isomeric) state cross section
SIG-V	сечения образования различных состояний	various states cross sections
SPC	энергетический спектр	energy spectrum
SPC-A	энергетический спектр А-частиц при делении	energy spectrum of A-particles in fission
SPC-DP	энергетический спектр фотонов, снимающих возбуждение	energy spectrum of de-excitation photons
SPC-IMP	импульсное распределение	impulse distribution
SPCTF	спектроскопический фактор	spectroscopic factor
SRE	исчерпывание правила сумм	sum rule exhausted
STFUN	силовая функция	strength function
STR	сила резонанса	resonance strength
S(0)	фактор нулевой энергии	zero-energy factor
T	тритон	triton
T	изоспин	isospin
TDIS	временное распределение	time distribution
THR	порог (реакции)	threshold (of reaction)
TN:	ядро-мишень	target nucleus
TOT	полное сечение	total cross section
TTOD	отношение (выходов или сечений фото- или электро-расщепления) для тритонов и дейтронов	triton-to-deuteron ratio (of yields or cross sections for photo- and electro-disintegration)
TRDEN	плотность перехода	transition density
TRR	скорость термоядерной реакции	thermonuclear reaction rate
X	неидентифицированный продукт реакции	nonidentified reaction product
XN	некоторое число нейтронов	some number of neutrons
YP	некоторое число протонов	some number of protons

IV. ТАБЛИЦА "ФОТОЯДЕРНЫЕ ДАННЫЕ"

TABLE "PHOTONUCLEAR DATA"

NUCLEUS		REACTION		FINAL/TARGET		ENERGY		ANGLE		QUANTITY		NUMBER	
=====													
! NUCLEUS ! REACTION ! FINAL/TARGET ! ENERGY ! ANGLE ! QUANTITY ! NUMBER !													
=====													
! Z=1 HYDROGEN A=2 !													
=====													
H- 2	(G,N)	FN: 1- H-	1	EN = 50.	45.	M: SIG, ASYM, COINC	88002						
	G, POL			..... 100.	... 90.		.....						
	(G,N)	FN: 1- H-	1	EN = 6.	30.	M: DST, SIG	88004						
	G, MON			..... 9.	... 155.		.....						
	(G,N+P)			EN = 40.		R: SIG, CORR(E)	88005						
				..... 120.	... ..		.....						
	(G,P)	FN: 0-NN-	1	EN = 50.	45.	M: SIG, ASYM, COINC	88001						
	G, POL			..... 100.	... 90.		.....						
	(E,E')	FN: 1- H-	2	EN-E = 292.8	60.	M: SPC, SIG, RSP	88003						
				..... 444.2	... 134.5		.....						
	(E,E')	FN: 1- H-	2	EN-E = 0.843	180.	M: SIG, FMF	88005						
				..... 1.281...	... ..	D: MULT	.....						
	(E,E')	FN: 1- H-	2	EN-E = 174.	60.	M: SPC, SIG, RSP	88007						
				..... 597.	... 134.5		.....						
	(N,G)	TN: 1- H-	1	EN-N = 76.		M: SPC, SIG	88006						
				.....	... ..		.....						
=====													
! Z=2 HELIUM A=3,4 !													
=====													
HE- 3	(G,P)	FN: 1- H-	2	EN = ----	90.	M: POL	88008						
				..... 600.	... ..		.....						
	(G,P)	FN: 1- H-	2	EN = 60.	90.	M: SPC, SIG, ASYM	88009						
	G, MON, POL			..... 350.	... ..		.....						
	(G,P)	FN: 1- H-	2	EN = 60.	60.	M: SIG, ASYM	88011						
	G, MON, POL			..... 350.	... 135.		.....						
	(G,P)	FN: 1- H-	2	EN-MEV= 60.	90.	M: SPC, SIG, ASYM	88012						
	G, MON, POL			..... 350.	... ..		.....						
	(E,E')	FN: 2-HE-	3	EN-E = 174.	60.	M: SPC, SIG, RSP	88007						
				..... 597.	... 134.5		.....						
	(E,E'+P)	FN: 1- H-	2	EN-E = 560.	45.	M: MES, SPC-IMP, SIG	88013						
				.....	... 142.5		.....						
	(P,G)	TN: 1- H-	2	EN-P = 800.		M: A-POW, ASYM	88014						
	P, POL			.....	... ..		.....						
	(P,G)	TN: 1- H-	2	EN = ----	30.	M: SPC, DST, SIG, A-POW	88015						
	P, POL			..... 7.5	... 150.		.....						
	(D,G)	TN: 1- H-	1	EN-D = 95.	50.	M: DST, SIG, A-POW	88010						
	D, POL			.....	... 130.		.....						
	(D,G)	TN: 1- H-	1	EN = ----	30.	M: SPC, DST, SIG, A-POW	88015						
	D, POL			..... 7.5	... 150.		.....						
=====													
HE- 4	(G,G)	FN: 2-HE-	4	EN = ----	22.	M: SPC, RSP, SIG	88020						
				..... 320.	... 60.		.....						
	(G,N)	FN: 2-HE-	3	EN = 40.	45.	M: SIG, ASYM	88021						
	G, MON, POL			.....	... 135.		.....						
	(G,N+P)	FN: 1- H-	2	EN = 40.		R: SIG, CORR(E)	88005						
				..... 120.	... ..		.....						
	(G,P)	FN: 1- H-	3	EN = ----	90.	M: POL	88008						
				..... 600.	... ..		.....						
	(G,P)	FN: 1- H-	3	EN = 60.	90.	M: SPC, SIG, ASYM	88009						
	G, MON, POL			..... 350.	... ..		.....						
	(G,P)	FN: 1- H-	3	EN = 120.	45.	M: DST, SIG, ASYM	88019						
	G, POL			..... 250.	... 135.		.....						

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
HE- 4	(G,P)	FN: 1- H- 3	EN = 40.	45.	M:SIG,ASYM	88001
	G,MON,POL		.....	... 135. ...		.....
	(G,P)	FN: 1- H- 3	EN = 28.6	4PI	M:SIG,ASYM	88022
	G,MON'		.....	... 58.1 ...	... D:PTON	.....
	(E,E')	FN: 2-HE- 4	EN-E = 174.	60.	M:SPC,SIG,RSP	88007
			.....	... 597. ...	... 134.5 ...	.....
	(E,E')	FN: 2-HE- 4	EN-E = 0.808	17.	M:SPC,DST,SIG	88018
			.....	... 1.18 ...	... 40. ...	.....
	(E,E')	FN: 2-HE- 4	EN = ----	180.	M:SPC,SIG	88023
			.....	... 54. ...	... ..	.....
	(E,E'+P)	FN: 1- H- 3	EN-E = 426.	47.	M:SPC-IMP,SIG,COINC	88016
			.....	... 68. ...	... ..	.....
	(D,G)	TN: 1- H- 2	EN-D = 1.2	50.	M:DST,SIG,A-POW	88017
	D,POL		.....	... 130. ...	... D:MULT	.....
	(D,G)	TN: 1- H- 2	EN-D = 0.3	130.	M:SPC,A-POW	88117
			.....	... 50. ...	... ..	.....

Z=3

LITHIUM

A=6

LI- 6	(G,P)	FN: 2-HE- 5	EN = 34.5	90.	M:SPC,SIG,SIG-0,SIG-1	88024
	G,MON		.....	... 98.8 ...	... ..	.....
	(G,P)	FN: 2-HE- 5	EN = 60.	90.	M:SIG,ASYM	88026
	G,MON,POL		.....	... 300. ...	... ..	.....
	(G,T)	FN: 2-HE- 3	EN = ----	90.	M:SIG	88027
			.....	... 90. ...	... ..	.....
	(E,E')	FN: 3-LI- 6	EN-E = 90.	42.	M:SPC,SIG	88025
			.....	... 260. ...	... 140. ...	.....
	(E,T)	FN: 2-HE- 3	EN = ----	90.	M:SIG	88027
			.....	... 90. ...	... ..	.....

Z=4

BERYLLIUM

A=7

BE- 7	(A,G)	TN: 2-HE- 3	EN-A = 0.195	90.	M:SPC,RSP,SIG	88028
			.....	... 0.686... ..	... D:S(0)	.....

Z=5

BORON

A=10,11

B- 10	(G,N+P)	FN: 4-BE- 8	EN = 66.	45.	M:MES,SIG,DST	88029
	G,MON		.....	... 103. ...	... 90. ...	.....
	(G,P)	FN: 4-BE- 9	EN = 66.	45.	M:MES,SIG,DST	88029
	G,MON		.....	... 103. ...	... 90. ...	.....
	(E,E)	FN: 5- B- 10	EN-E = 203.	150.	M:FMF	88030
			.....	... 416. ...	... 180. ...	.....
	(E,E')	FN: 5- B- 10	EN-E = 203.	150.	M:FMF	88030
			.....	... 416. ...	... 180. ...	.....
B- 11	(E,E)	FN: 5- B- 11	EN-E = 203.	150.	M:FMF	88030
			.....	... 416. ...	... 180. ...	.....
	(E,E')	FN: 5- B- 11	EN-E = 203.	150.	M:FMF	88030
			.....	... 416. ...	... 180. ...	.....

Z=6

CARBON

A=12

C- 0	(E,E')	FN: 6- C- 0	EN-E = 0.653	11.9	M:SIG	88031
			.....	... 1.65 ...	... 53. ...	... D:MULT

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
C- 0	(P,G)		EN-P = 72. ..... 100.	90. ... 150.	M:SPC,DST	88032
C- 12	(G,N) G,MON	FN: 6- C- 11	EN = 30. ..... 100.	65.	M:SPC,DST,SIG,SIG-0	88035
	(G,N+P)	FN: 5- B- 10	EN = 40. ..... 120.		R:SIG,CORR(E)	88005
	(G,N+P) G,MON	FN: 5- B- 10	EN = 83. ..... 133.	55. ... 127.	M:MES,SIG,SPC-IMP	88037
	(G,N+P+A)	FN: 3-LI- 6	EN = 40. ..... 120.		R:SIG,CORR(E)	88005
	(G,P)	FN: 5- B- 11	EN = 27. ..... 140.		M:SIG,CORR(E),ABI	88038
	(G,P) G,MON,POL	FN: 5- B- 11	EN = 41. ..... 93.	30. ... 90.	M:A-POW	88039
	(G,P) G,MON	FN: 5- B- 11	EN = 60. .....	65. ... 115.	M:SPC,DST,SIG,SIG-0	88040
	(G,P+T)	FN: 4-BE- 8	EN = 27. ..... 140.		M:SIG,CORR(E),ABI	88038
	(G,T)	FN: 5- B- 9	EN = 27. ..... 140.		M:SIG,CORR(E)	88038
	(G,A)	FN: 4-BE- 8	EN = 27. ..... 140.		M:SIG,CORR(E)	88038
	(E,E'+P)	FN: 5- B- 11	EN-E = 280. ..... 480.		M:MES,SPC-IMP D:SPCTF	88033
	(E,E'+P)	FN: 5- B- 11	EN-E = 280. ..... 480.		M:MES,SPC,SPC-IMP D:SPCTF,RDI,E	88036
	(P,G)	TN: 5- B- 11	EN-P = 20. ..... 100.	30. ... 150.	M:SPC,SIG,SIG-0,DST	88034

Z=7

NITROGEN

A=13,15,17

N- 13	(P,G)	TN: 6- C- 12	EN-P = 20. ..... 100.	30. ... 150.	M:SPC,SIG,SIG-0,DST	88034
N- 15	(G,2N) G,MON	FN: 7- N- 13	EN = 21. ..... 28.		M:SIG D:T,G-WIDTH	88042
	(E,E)	FN: 7- N- 15	EN-E = 70. ..... 430.	40. ... 140.	M:FMF D:CDENS	88041
N- 17	(P,G)	TN: 6- C- 16	EN = 17. ..... 41.	35. ... 135.	M:SPC,DST,SIG,SIG-0	88049

Z=8

OXYGEN

A=16,17

O- 16	(G,N+P)	FN: 7- N- 14	EN = 40. ..... 120.		R:SIG,CORR(E)	88005
	(G,P)	FN: 7- N- 15	EN = ---- ..... 25.8	30. ... 150.	M:DST,SIG,SIG-0	88043
	(G,P)	FN: 7- N- 15	EN = 196. ..... 361.	20. ... 150.	M:SPC,DST,SIG,SIG-0	88047
	(P,G)	TN: 7- N- 15	EN-P = 20. ..... 100.	30. ... 150.	M:SPC,SIG,SIG-0,DST	88034
	(P,G)	TN: 7- N- 15	EN-P = 20.8 .....	30. ... 120.	M:SPC,SIG,SIG-0,A-POW	88045
	(P,G) P,POL	TN: 7- N- 15	EN = 17.8 ..... 24.9	25. ... 155.	M:SPC,DST,SIG,A-POW D:MULT	88046
	(A,G)	TN: 6- C- 12	EN-A = 1.29 ..... 3.		M:SPC,COINC,SIG D:MULT	88044



NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
0- 17	(E,E)	FN: 8- 0- 17	EN-E = 249.3	41.7	M:FMF,SIG	88050
			..... 685.1	... 160.	... D:MULT	.....
	(N,G)	TN: 8- 0- 16	EN = ---	125.	M:SPC	88048
			..... 10.	... ..	... D:STR,E,J-PI,G-WIDTH	.....
	(D,G)	TN: 7- N- 15	EN = 26.	35.	M:SPC,DST,SIG,SIG-0	88049
			..... 39.	... 135.	...	.....

Z=9 FLUORINE A=17

F- 17	(P,G)	TN: 8- 0- 16	EN-P = 20.	30.	M:SPC,SIG,SIG-0,DST	88034
			..... 100.	... 150.	...	.....
	(P,G)	TN: 8- 0- 16	EN-P = 20.8	30.	M:SPC,SIG,SIG-0,A-PDW	88045
			.....	... 120.	...	.....
F- 19	(A,G)	TN: 7- N- 15	EN-A = 5.41	90.	M:ABY	88051
			..... 8.12	... ..	... D:STR,G-WIDTH	.....

Z=10 NEON A=20,21,23

NE- 20	(P,G)	TN: 9- F- 19	EN = 16.1	40.	M:SPC,DST,SIG,SIG-0	88054
	P,POL		..... 23.	... 140.	... D:MULT	.....
	(A,G)	TN: 8- 0- 16	EN = 1.7			88052
			..... 2.3	... ..	... D:S(0)	.....
NE- 21	(N,G)	TN:10-NE- 20	EN-N = 0.0025		M:ABY,SIG	88055
			..... 0.2	... ..	... D:E,J-PI,G-WIDTH	.....
NE- 23	(N,G)	TN:10-NE- 22	EN-N = 0.0025		M:ABY,SIG	88055
			..... 0.2	... ..	... D:E,J-PI,G-WIDTH	.....

Z=12 MAGNESIUM A=24,26

MG- 24	(G,N)	FN:12-MG- 23	EN = 16.		M:SIG,SIG-0,SIG-V,ABI	88056
			..... 30.	... ..	...	.....
	(P,G)	TN:11-NA- 23	EN-P = 0.31		M:ABY	88052
			..... 0.35	... ..	...	.....
MG- 26	(E,E)	FN:12-MG- 26	EN-E = 85.	33.	M:FMF	88057
			..... 360.	... 154.	... D:CDENS	.....

Z=13 ALUMINIUM A=27

AL- 27	(P,G)	TN:12-MG- 26	EN-P = 0.31	55.	M:SPC,DST,BRANCH,LFT	88058
			..... 1.84	... 90.	... D:E,J-PI	.....
	(P,G)	TN:12-MG- 26	EN-P = 0.		R:E,J-PI,T,STR	88113
			..... 8.1	... ..	...	.....

Z=14 SILICON A=28

SI- 28	(N,G)	TN:14-SI- 27	EN = ---	125.	M:SPC	88048
			..... 10.	... ..	... D:STR,E,J-PI,G-WIDTH	.....
	(P,G)	TN:13-AL- 27	EN-P = 20.	30.	M:SPC,SIG,SIG-0,DST	88034
			..... 100.	... 150.	...	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
SI- 28	(P,G)	TN:13-AL- 27	EN-P = 20.8	30.	M:SPC,SIG,SIG-0,A-POW	88045
			.....	... 120.		.....
	(P,G)	TN:13-AL- 27	EN-P = 0.2	90.	M:SPC,ABY	88059
			.....	... 135.	D:E,J-PI,STR,TRR	.....
	(P,G)	TN:13-AL- 27	EN-P = 0.5	0.	M:SPC,DST,SIG,SIG-0	88060
			.....	... 129.		.....
=====						
		Z=15	PHOSPHORUS	A=29,30,31		
=====						
P- 29	(P,G)	TN:14-SI- 28	EN-P = 20.8	30.	M:SPC,SIG,SIG-0,A-POW	88045
			.....	... 120.		.....
P- 30	(P,G)	TN:14-SI- 29	EN = 6.	0.	M:SPC,DST	88114
			.....	... 90.	D:STR,MULT	.....
P- 31	(G,N+G')	FN:15- P- 30	EN = ----		R:ABY,E,J-PI,T	88061
			.....	... 30.		.....
	(G,P+G')	FN:14-SI- 30	EN = ----		R:ABY,E,J-PI,T	88061
			.....	... 30.		.....
	(G,X+G')		EN = ----		R:ABY,E,J-PI,T	88061
			.....	... 30.		.....
	(P,G)	TN:14-SI- 30	EN-P = 1.94	0.	M:ABY,DST,MIX,BRANCH	88062
			.....	... 2.11 ... 90.	D:MULT,B(EL),E,J-PI	.....
=====						
		Z=16	SULPHUR	A=32		
=====						
S- 32	(G,N)	FN:16- S- 31	EN = 18.	48.	M:DST,SIG,SIG-0	88063
			.....	... 29. ... 139.		.....
	(N,G)	TN:16- S- 31	EN = ----	125.	M:SPC	88048
			.....	... 10.	D:STR,E,J-PI,G-WIDTH	.....
=====						
		Z=17	CHLORINE	A=35		
=====						
CL- 35	(P,G)	TN:16- S- 34	EN-P = 0.4	0.	M:ABY,DST,MIX,BRANCH	88062
			.....	... 0.7 ... 90.	D:MULT,B(EL),E,J-PI	.....
=====						
		Z=18	ARGON	A=40		
=====						
AR- 40	(G,G')	FN:18-AR- 40	EN = 8.5	90.	M:SPC,INT,DST	88065
			.....	... 11.8 ... 127.	D:J-PI,G-WIDTH	.....
	(G,G')	FN:18-AR- 40	EN = 8.	90.	M:SPC,DST	88115
			.....	... 11. ... 127.	D:E,J-PI,G-WIDTH,MULT	.....
	(A,G)	TN:16- S- 36	EN-A = 2.35	0.	M:SPC,DST,LFT	88064
			.....	... 3.5 ... 90.	D:E,J-PI,MULT	.....
=====						
		Z=19	POTASSIUM	A=37,39		
=====						
K- 37	(P,G)	TN:18-AR- 36	EN-P = 0.9	0.	M:SPC,DST,ABY,BRANCH	88066
			.....	... 3. ... 90.	D:E,J-PI,G-WIDTH	.....
K- 39	(G,G')	FN:19- K- 39	EN = 6.6	127.	M:SPC	88067
			.....	... 9.4 ...	D:STR,J-PI,G-WIDTH	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
=====						
! NUCLEUS ! REACTION ! FINAL/TARGET ! ENERGY ! ANGLE ! QUANTITY ! NUMBER!						
=====						
!						
! Z=20 CALCIUM A=40,41 !						
!						
CA- 0	(G,N)		EN = 20.	55.	M:SPC,SIG,DST,ASYM	88068
	G,MON		..... 39.	... 125.	...	.....
CA- 40	(E,E'+P)	FN:19- K- 39	EN-E = 129.	39.9	M:SPC,DST,COINC,MES	88069
			.....	... 140.1	...	.....
	(E,E'+P)	FN:19- K- 39	EN-E = 700.		M:SIG	88071
			.....	...	D:STFUN	.....
	(P,G)	TN:19- K- 39	EN = 9.	55.		88070
			..... 10.5	...	D:MULT,STR	.....
CA- 41	(E,E)	FN:20-CA- 41	EN-E = 175.	52.	M:SPC,SIG,FMF	88072
			..... 320.	... 155.	D:MULT,RDI	.....
=====						
!						
! Z=22 TITANIUM A=50 !						
!						
TI- 50	(E,E')	FN:22-TI- 50	EN-E = 70.	40.	M:SPC,DST,SIG,FMF	88073
			..... 361.	... 154.	D:MULT,B(EL)	.....
=====						
!						
! Z=23 VANADIUM A=51 !						
!						
V- 51	(E,E'+P)	FN:22-TI- 50	EN-E = 265.	31.53	M:SPC,SPC-IMP,MES	88116
			..... 410.	... 77.19...	D:SPCTF,RDI	.....
=====						
!						
! Z=24 CHROMIUM A=52 !						
!						
CR- 52	(E,E')	FN:24-CR- 52	EN-E = 170.	115.	M:SPC,DST,FMF	88074
			..... 260.	... 154.	D:MULT,T	.....
=====						
!						
! Z=25 MANGANESE A=51,53 !						
!						
MN- 51	(P,G)	TN:24-CR- 50	EN = 7.7		M:SPC,DST	88075
			..... 8.3	...	D:E,J-PI,T	.....
	(P,G)	TN:24-CR- 50	EN-P = 1.059	0.	M:DST,BRANCH	88076
			..... 1.513...	90.	D:E,J-PI	.....
MN- 53	(P,G)	TN:24-CR- 52	EN = 7.	55.	M:SPC,SIG	88077
			..... 10.	...	D:STFUN	.....
=====						
!						
! Z=26 IRON A=ECTECTB.CMECb !						
!						
FE- 0	(E,E')	FN:26-FE- 0	EN-E = 0.653	11.9	M:SIG	88031
			..... 1.65	... 53.	D:MULT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
=====						
		Z=28	NICKEL	A=58,60,64		
=====						
NI- 0	(E,E'+P)		EN = 0.	0.	M:SPC,DST,SIG,COINC	88078
			..... 70.	... 180.	.....	.....
	(E,E'+A)		EN = 0.	0.	M:SPC,DST,SIG,COINC	88078
			..... 70.	... 180.	.....	.....
NI- 58	(E,E'+P)	FN:27-CO- 57	EN = 8.	10.	M:SPC	88079
			..... 25.	... 210.	.....	.....
	(E,E'+A)	FN:26-FE- 54	EN = 8.	10.	M:SPC	88079
			..... 25.	... 210.	.....	.....
NI- 60	(E,E'+P)	FN:27-CO- 59	EN = 12.	10.	M:SPC	88079
			..... 25.	... 210.	.....	.....
	(E,E'+A)	FN:26-FE- 56	EN = 12.	10.	M:SPC	88079
			..... 25.	... 210.	.....	.....
NI- 64	(E,E)	FN:28-NI- 64	EN = 147.4	29.	M:SPC,DST	88080
			..... 356.	... 56.	D:MULT,E,J-PI	.....
	(E,E')	FN:28-NI- 64	EN = 147.4	29.	M:SPC,DST	88080
			..... 356.	... 56.	D:MULT,E,J-PI	.....
=====						
		Z=29	COPPER	A=62,63,65		
=====						
CU- 0	(P,G)		EN-P = 72.	90.	M:SPC,DST	88032
			.....	... 150.	.....	.....
	(P,G)		EN-P = 1.93	0.	M:SPC,DST	88081
			..... 2.45	... 90.	D:MULT,STR,E,J-PI	.....
	(P,G)		EN = 8.33	0.	M:SPC,DST	88082
			..... 8.91	... 90.	D:MULT,B(EL)	.....
CU- 62	(P,G)	TN:28-NI- 61	EN-P = 1.05	55.	M:SIG	88083
			..... 3.98	... ..	D:TRR	.....
CU- 63	(E,E')	FN:29-CU- 63	EN-E = 70.	80.	M:SPC,FMF	88084
			..... 150.	... 140.	D:E,J-PI,MULT	.....
CU- 65	(E,E')	FN:29-CU- 65	EN-E = 70.	80.	M:SPC,FMF	88084
			..... 150.	... 140.	D:E,J-PI,MULT	.....
	(E,E'+P)	FN:28-NI- 64	EN = 13.	0.	M:COINC,MES,SIG,SIG-0	88085
			..... 18.	... 180.	.....	.....
=====						
		Z=30	ZINC	A=64		
=====						
ZN- 64	(E,E'+P)	FN:29-CU- 63	EN = 12.	10.	M:SPC	88079
			..... 25.	... 210.	.....	.....
	(E,E'+A)	FN:28-NI- 60	EN = 12.	10.	M:SPC	88079
			..... 25.	... 210.	.....	.....
=====						
		Z=34	SELENIUM	A=74,76,78,80,82		
=====						
SE- 74	(E,E)	FN:34-SE- 74	EN-E = 225.	20.	M:DST,SIG	88086
			.....	... 83.	D:CDENS	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
SE- 76	(E,E)	FN:34-SE- 76	EN-E = 225. .....	20. ... 83.	M:DST,SIG ... D:CDENS	88086 .....
SE- 78	(E,E)	FN:34-SE- 78	EN-E = 225. .....	20. ... 83.	M:DST,SIG ... D:CDENS	88086 .....
SE- 80	(E,E)	FN:34-SE- 80	EN-E = 225. .....	20. ... 83.	M:DST,SIG ... D:CDENS	88086 .....
SE- 82	(E,E)	FN:34-SE- 82	EN-E = 225. .....	20. ... 83.	M:DST,SIG ... D:CDENS	88086 .....

! Z=40 ZIRCONIUM A=90 !

ZR- 90	(G,N)	FN:40-ZR- 89	EN = 21.5 ..... 24.5	...	... D:IRAT,IYR	88087 .....
	(G,2N)	FN:40-ZR- 88	EN = 21.5 ..... 24.5	...	... D:IRAT,IYR	88087 .....
	(E,E'+P)	FN:39- Y- 50	EN-E = 265. ..... 410.	31.53 ... 77.19...	M:SPC,SPC-IMP,MES D:SPCTF,RDI	88116 .....

! Z=47 SILVER A=ECTECTBEH.CMECh !

AG- 0	(G,X)	FN:47-A106-M	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:43-TC- 96	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:44-RU- 95	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:44-RU- 97	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:44-RU-103	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:45-RH-101	EN = ---- ..... 4.5	...	M:SIG-M,ABY,SIG,MDIS	88088 .....
	(G,X)	FN:45-RH-101	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:45-RH-102	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:46-PD-100	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:46-PD-101	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:47-AG-103	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:47-AG-104	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:47-AG-105	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:41-NB- 92	EN = ---- ..... 4.5	...	M:SIG-M,ABY,SIG,MDIS	88088 .....
	(G,X)	FN:41-NB- 95	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:42-MO- 90	EN = ---- ..... 4.5	...	M:ABY,SIG,MDIS	88088 .....
	(G,X)	FN:42-MO- 93	EN = ---- ..... 4.5	...	M:SIG-M,ABY,SIG,MDIS	88088 .....
	(G,X)	FN:43-TC- 95	EN = ---- ..... 4.5	...	M:SIG-M,ABY,SIG,MDIS	88088 .....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
AG-0	(G,X)	FN:43-TC-95	EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88088
	(P,G)		EN-P = 72. .....	90. ... 150. ...	M:SPC,DST	88032
=====						
		Z=48	CADMIUM	A=ECTECTB.CMECб		
=====						
CD-0	(G,N)		EN = 20. ..... 39. ...	55. ... 125. ...	M:SPC,SIG,DST,ASYM	88068
	G,MDN					
=====						
		Z=49	INDIUM	A=115		
=====						
IN-115	(G,G')	FN:49-IN-115	EN = 0.2 ..... 1.5 ...		M:SPC,SIG-M,ABI	88089
=====						
		Z=50	TIN	A=112,114,116,119,120,124		
=====						
SN-112	(G,X)		EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88090
SN-114	(G,X)		EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88090
	(A,G)	TN:48-CD-110	EN-A = 24. .....		M:SPC,ISY,CDINC D:MULT,E,J-PI	88091
SN-116	(G,X)		EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88090
SN-119	(G,X)		EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88090
SN-120	(G,X)		EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88090
SN-124	(G,X)		EN = --- ..... 4.5 ...		M:ABY,SIG,MDIS	88090
=====						
		Z=58	CERIUM	A=140		
=====						
CE-140	(E,E')	FN:58-CE-140	EN-E = 100. ..... 370. ...	40. ... 155. ...	M:SPC,SIG D:MULT	88092
=====						
		Z=62	SAMARIUM	A=152		
=====						
SM-152	(E,E')	FN:62-SM-152	EN-E = 80. ..... 300. ...	45. ... 107. ...	M:SPC,FMF,SIG,SIG-0 D:CDENS	88093
=====						
		Z=63	EUROPIUM	A=152		
=====						
EU-152	(N,G)	TN:63-EU-151	EN-N = 0.5 ..... 2.2 ...		M:SPC,SIG D:IYR	88094

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
=====						
		Z=48	CADMIUM	A=ECTECTB,CMECB		
=====						
CD-154	(N,G)	TN:64-GD-153	EN-N = 0.003 ..... 0.5 ...		M:SIG,BRANCH ... D:TRR	88095 .....
CD-155	(N,G)	TN:64-GD-154	EN-N = 0.003 ..... 0.5 ...		M:SIG,BRANCH ... D:TRR	88095 .....
CD-156	(N,G)	TN:64-GD-155	EN-N = 0.003 ..... 0.5 ...		M:SIG,BRANCH ... D:TRR	88095 .....
CD-158	(N,G)	TN:64-GD-157	EN-N = 0.003 ..... 0.5 ...		M:SIG,BRANCH ... D:TRR	88095 .....
CD-161	(N,G)	TN:64-GD-160	EN-N = 0.46 ..... 3.05 ...		M:SPC,SIG	88096 .....
=====						
		Z=66	DYSPROSIUM	A=160,161,162,163,164,165		
=====						
DY- 0	(N,G)		EN-E = 0.016 ..... 0.46 ...		M:SIG	88098 .....
DY-160	(G,G')	FN:66-DY-160	EN = ---- ..... 4.1 ...	100. ... 150.	M:SPC,DST ... D:E,J-PI,B(EL)	88097 .....
DY-161	(N,G)	TN:66-DY-160	EN-E = 0.016 ..... 0.46 ...		M:SIG	88098 .....
DY-162	(G,G')	FN:66-DY-162	EN = ---- ..... 4.1 ...	100. ... 150.	M:SPC,DST ... D:E,J-PI,B(EL)	88097 .....
	(N,G)	TN:66-DY-161	EN-E = 0.016 ..... 0.46 ...		M:SIG	88098 .....
DY-163	(N,G)	TN:66-DY-162	EN-E = 0.016 ..... 0.46 ...		M:SIG	88098 .....
DY-164	(G,G')	FN:66-DY-164	EN = ---- ..... 4.1 ...	100. ... 150.	M:SPC,DST ... D:E,J-PI,B(EL)	88097 .....
	(N,G)	TN:66-DY-163	EN-E = 0.016 ..... 0.46 ...		M:SIG	88098 .....
DY-165	(N,G)	TN:66-DY-164	EN-E = 0.016 ..... 0.46 ...		M:SIG	88098 .....
=====						
		Z=73	TANTALUM	A=180		
=====						
TA-180	(G,G')	FN:73-TA-180	EN = ---- ..... 5. ...		M:AB1	88107 .....
=====						
		Z=76	OSMIUM	A=188,190,192		
=====						
OS-188	(E,E')	FN:76-OS-188	EN-E = 200. ..... 500.	25. ... 74.	M:SPC,DST ... D:TRDEN,RDI,E,J-PI	88104 .....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
OS-190	(E,E')	FN:76-OS-190	EN-E = 200. ..... 500.	25. ... 74.	M:SPC,DST D:TRDEN,RDI,E,J-PI	88104
OS-192	(E,E')	FN:76-OS-192	EN-E = 200. ..... 500.	25. ... 74.	M:SPC,DST D:TRDEN,RDI,E,J-PI	88104
			Z=78	PLATINUM	A=194,196	
PT-194	(E,E')	FN:78-PT-194	EN-E = 200. ..... 500.	25. ... 74.	M:SPC,DST D:TRDEN,RDI,E,J-PI	88104
PT-196	(E,E')	FN:78-PT-196	EN-E = 200. ..... 500.	25. ... 74.	M:SPC,DST D:TRDEN,RDI,E,J-PI	88104
			Z=79	GOLD	A=ECTECT.CMECB	
AU- 0	(P,G)		EN-P = 72. .....	30. ... 150.	M:SPC,DST	88032
			Z=82	LEAD	A=208	
PB- 0	(G,N) G,MON		EN = 20. ..... 39.	55. ... 125.	M:SPC,SIG,DST,ASYM	88068
PB-208	(G,G') G,MON	FN:82-PB-208	EN = 1. ..... 100.	30. ... 150.	M:DST,SIG D:TOT	88105
			Z=90	THORIUM	A=232,233,234,235,236,238	
TH-232	(G,G')	FN:90-TH-232	EN = 2.9 ..... 4.1	117. ... 165.	M:SPC,DST,FMF D:B(EL),PTOE	88107
	(G,F)		EN = 6. ..... 10.		M:DST,ANIS	88099
	(E,E')	FN:90-TH-232	EN-E = 20.2 ..... 55.9	117. ... 165.	M:SPC,DST,FMF D:B(EL),PTOE	88107
TH-233	(N,G)	TN:90-TH-232	EN-E = 3. .....		M:SIG	88106
TH-234	(G,F)		EN = 6. ..... 10.		M:DST,ANIS	88099
TH-235	(N,G)	TN:90-TH-234	EN-E = 3. .....		M:SIG	88106
TH-236	(G,F)		EN = 6. ..... 10.		M:DST,ANIS	88099
TH-238	(G,F)		EN = 6. ..... 10.		M:DST,ANIS	88099
	(N,G)		EN-E = 3. .....		M:SIG	88106



NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
=====						
	Z=92	URANIUM		A=234,236,237,238		
=====						
U-234	(G,F)		EN = 5.5		M: DST	88108
			..... 6.5	...	...	.....
U-236	(G,F)		EN = ----		M: SIG,MDIS,DST	88100
			..... 16.	...	...	.....
U-237	(N,G)	TN:92- U-236	EN-N = 0.3		M: SIG	88109
			..... 2.2	...	...	.....
U-238	(G,G)	FN:92- U-238	EN = ----		M: SIG	88110
			..... 10.	...	D: MULT	.....
	(G,ABS)		EN = 10.		M: SIG	88111
			..... 20.	...	...	.....
	(G,F)		EN = 46.4		M: SIG,ABX	88101
	G,MDN,POL		..... 71.9	...	...	.....
	(G,F)		EN = 5.5		M: DST	88108
			..... 6.5	...	...	.....
	(E,E'+F)		EN = 5.5	0.	M: DST,COINC,CORR(E)	88118
			..... 15.	... 180.	D: MULT,E,J-PI	.....
=====						
	Z=93	NEPTUNIUM		A=237		
=====						
NP-237	(G,F)		EN = 6.	10.	M: SIG	88102
			..... 60.	... 100.	D: MULT	.....
	(E,F)		EN-E = 6.	10.	M: SIG	88102
			..... 60.	... 100.	D: MULT	.....
=====						
	Z=95	AMERICIUM		A=243		
=====						
AM-243	(G,N)	FN:95-AM-242	EN = 450.		M: SIG	88112
			..... 950.	...	D: PTOE,ITOP	.....
	(G,F)		EN = 450.		M: SIG	88112
			..... 950.	...	D: PTOE	.....
	(E,N)	FN:95-AM-242	EN = 450.		M: SIG	88112
			..... 950.	...	D: PTOE,ITOP	.....
	(E,F)		EN = 450.		M: SIG	88112
			..... 950.	...	D: PTOE	.....

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	AFZAL ANSARI M.	88096					
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	ALLEN K.W.	88051	88070				
	ALSTER J.	88004					
	ALTEMUS R.	88002	88007				
	AMROJAN K.A.	88088					
	AMROUN A.	88072					
	ANDERSEN H.G.	88093					
	ANDERSON J.A.	88089	88112				
	ANGHINOLFI M.	88049					
	ANNAND J.R.M.	88037					
	ANSALDO E.J.	88084					
	ANTHONY I.	88037					
	ARAKELJAN A.A.	88090					
	ARENHOVEL H.	88002					
	ARNOLD R.G.	88004					
	ARRIAGA A.	88010					
	ARRUDA-NETO J.D.T.	88102					
	ARZIBEKOV U.R.	88061					
	AUSTIN E.J.	88020					
B	BABICHEV E.D.	88086					
	BACHER A.D.	88034	88045				
	BAGHAEI H.	88050					
	BALABEKJAN A.R.	88090					
	BALANDA A.	88091					
	BAMBER C.	88015					
	BAR-TOUV J.	88065	88115				
	BARAN D.T.	88031					
	BARNEUD D.	88032					
	BARNES C.A.	88044					
	BATES A.D.	88042					
	BAYE D.	88053					
	BECK R.	88037					
	BECKER H.W.	88028	88059				
	BEER H.	88095					
	BELLI F.	88022					
	BENTON D.	88004					
	BERANT Z.	88003					
	BERG U.E.P.	88097	88107				
	BERKVEN'S F.	88043					
	BERMAN B.L.	88050					
	BERNABEI R.	88022	88101				
	BERNHEIM M.	88013	88071				
	BERNSTEIN A.M.	88002	88007				
	BERTOZZI W.	88050					
	BIRENBAUM Y.	88003					
	BLAND L.C.	88010					
	BLANPIED G.S.	88014					
	BLATT S.L.	88034	88045				
	BLINOV M.V.	88106					
	BLOK H.F.	88016	88033	88036	88057	88080	88116
	BLOMQUIST K.I.	88002	88007				
	BOCHKAREVA I.E.	88108					
	BOEGLIN W.	88104					
	BOFFI S.	88071					
	BOHLE D.	88107					
	BOKHOVKO M.V.	88098					

BONDARENKO V.I.	88077	
BOOTH E.C.	88020	
BOSTED P.	88004	
BOURGEOIS PH.	88024	
BRANFORD D.	88037	88040
BRAUNSTEIN M.R.	88080	
BRICAULT P.	88072	
BROWN J.D.	88010	
BRUSSEL M.K.	88013	
BUKI A.JU.	88025	88086
BUTTON-SHAFER J.	88030	
BYRD R.C.	88010	

C	CALARCO J.R.	88054	
	CAMERON J.A.	88075	88076
	CAPITANI G.P.	88013	88071
	CARDMAN L.S.	88092	88093
	CARLOS P.J.	88024	
	CASANO L.	88022	
	CAVEDON J.-M.	88072	88093
	CHANG K.H.	88044	88052
	CHENLIN WEN	88079	
	CHISHOLM A.	88022	
	CHOPOROV JU.M.	88108	
	CHUVAEV S.V.	88106	
	CLEMENTS J.-C.	88093	
	CLOGHER L.	88004	
	COLLINS C.B.	88089	88112
	CONNELLY J.P.	88092	
	CORVISIERO P.	88049	
	CRAWFORD G.I.	88037	
	CSEH J.	88064	

D	D'ANGELO S.	88022	88101		
	DANAGULJAN A.C.	88090			
	DANCER S.N.	88037			
	DAVIDSON W.F.	88063			
	DAVIS N.	88015			
	DAVYDOV M.G.	88087			
	DE ESCH H.P.L.	88066			
	DE GRAEVE A.	88043			
	DE JAGER C.W.	88030	88041	88057	88074
	DE JONG M.	88033			
	DE MINIAC A.	88024			
	DE OLIVEIRA V.C.	88101			
	DE PASCALE M.P.	88022	88101		
	DE SANCTIS E.	88013	88071		
	DE VRIES C.	88073			
	DE VRIES H.	88057	88074	88080	
	DE VRIES J.W.	88041			
	DE WITT P.	88058	88113		
	DE WITT HUBERTS P.K.A.	88016	88033	88036	88072 88073 88116
	DEBEBE B.	88004	88030		
	DEBEVEC P.T.	88068			
	DECHAMBRIER G.	88004			
	DEL BIANCO W.	88111			
	DELLI CARPINI D.	88020			
	DEMEXHINA N.A.	88088			
	DEMENTIJ S.V.	88018			
	DEN HERDER J.W.A.	88116			
	DEOM C.	88006			
	DESCOUEMONT P.	88053			
	DIETRICH F.	88004			

	DIN G.U.	88075	88076			
	DIXIT S.	88050				
	DJUKOV S.N.	88027				
	DODGE W.R.	88117				
	DODSON G.	88020				
	DOGJUST I.V.	88005	88038			
	DOLBILKIN B.S.	88079				
	DONOGHUE T.R.	88034	88045			
	DOORNHOF D.	88041				
	DOWELL D.H.	88068				
	DREUX P.	88072				
	DRISSI S.	88032				
	DUBACH J.	88023	88030			
	DUNN P.C.	88013				
	DUPONT C.	88006				
	DYTMAN S.A.	88002	88007			
E	EBERHARD C.D.	88089	88112			
	EDEN J.	88029	88039			
	EGELHOF P.	88104				
	ELWYN A.J.	88060				
	ENDT P.M.	88058	88113			
	ENRICH H.J.	88118				
	ENT R.	88016				
	ERMAK V.P.	88021				
	EVANS H.C.	88044				
	EVSEEV I.G.	88027	88103			
F	FAGG L.W.	88074				
	FAGOT J.	88024				
	FALLOU J.L.	88024				
	FARTUSHNYJ V.A.	88027				
	FELDMAN G.	88017				
	FERDINANDE H.	88043				
	FILATENKOV A.A.	88106				
	FILIPPONE B.F.	88031				
	FILIPPONE B.W.	88044	88052			
	FINN J.M.	88050				
	FISHER G.A.	88054				
	FREYTAG A.	88068				
	FRIEDRICH J.	88079				
	FRODYMA M.	88004				
	FROIS B.	88072	88092	88093	88104	
	FRULLANI S.	88013	88071			
	FUJII Y.	88035				
G	GABELKO A.S.	88061				
	GALL K.P.	88020				
	GANENKO V.B.	88009	88011	88012	88019	88021 88
	GANICH P.P.	88108				
	GARGANNE P.	88024				
	GARIBALDI F.	88013	88071			
	GARMAN E.F.	88051				
	GAUTAM R.P.	88096				
	GAVEDON J.M.	88104				
	GEARHART R.A.	88004				
	GEESAMAN D.F.	88031	88074			
	GERARD A.	88013	88071			
	GET'MAN V.A.	88011	88019			
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	GIROD M.	88093	88104			
	GIROLAMI B.	88022	88101			

	GIUSTI C.	88071				
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	GLESNER J.W.	88112				
	GOGNY D.	88093				
	GOODMAN C.D.	88072				
	GORBENKO E.S.	88021				
	GORRES J.	88052				
	GOSSETT C.A.	88068				
	GOUTTE D.	88072	88092	88093	88104	
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	GREEN M.	88031				
	GRISORJAN E.O.	88088				
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	HALL S.J.	88037				
	HALPERN I.	88068				
	HAMMER J.W.	88028				
	HANN K.H.	88044				
	HANNA S.S.	88046	88054			
	HANSFER V.Y.	88083				
	HARDIE S.	88060				
	HARTY P.D.	88035				
	HAUSMAN H.J.	88034	88045			
	HAYWARD E.	88117				
	HEIL R.D.	88097	88100	88107	88118	
	HEISENBERG J.H.	88092				
	HENNEBERG J.M.	88105				
	HERDADE S.B.	88102				
	HERSMAN F.W.	88092				
	HESMONDHALGH S.K.B.	88051				
	HESSELINK W.H.A.	88091				
	HICKS R.S.	88004	88023	88030	88041	
	HILGEMEIER M.	88028				
	HIND T.	88060				
	HOODGE W.L.	88089				
	HOFFMAN H.M.	88017				
	HOFFMAN R.	88093				
	HOISTAD B.	88014				
	HOLT R.J.	88031				
	HOTTA A.	88004	88023	88030		
	HUET M.	88093				
	HUFFMAN R.L.	88023	88030			
	HUGI M.	88010				
	HUMMEL K.D.	88107				
	HYDE-WRIGHT C.C.	88050				
	HYNES M.V.	88050				
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	INCICCHITTI A.	88022				
	IRGASHEV K.M.	88056				
	ISHKHANDOV B.S.	88056	88061			
	IVANOV D.I.	88103				
	IZOSIMOV I.N.	88081	88082			
J	JACKSON H.E.	88031	88071			
	JANS E.	88016	88033	88036	88116	
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	JONES K.	88014				
	JOURGAN J.	88031				
	JOZSA M.	88064				
	JUHASZ S.	88099				

	JURY J.W.	88024	88063				
K	KACHAN A.S.	88114					
	KAHANE S.	88003					
	KAILAS S.	88096					
	KALANTAR-NAYESTANAKI N.	88050					
	KALEN J.	88034	88045				
	KAPITONOV I.M.	88056	88061				
	KARASEV S.P.	88008					
	KARBAN O.	88074					
	KARWOWSKI H.J.	88010					
	KASATKIN JU.A.	88019					
	KATRAMATOU A.T.	88004					
	KAWAHARA H.	88069	88085				
	KAWAZOE Y.	88069	88085				
	KAZAKOV L.E.	88098					
	KEDDY R.J.	88070					
	KEINONEN J.	88064					
	KEIZER P.H.M.	88116					
	KELLIE J.D.	88037					
	KELLY J.J.	88050					
	KERKHOVE E.	88043					
	KERN J.	88032					
	KHAMRAEV F.SH.	88087					
	KHAN SH.	88079					
	KHODJACHIKH A.F.	88038					
	KHOMICH A.A.	88025	88086				
	KHUDAVERDJAN A.G.	88090					
	KHVASTUNOV V.M.	88027					
	KHVOROSTJAN V.M.	88021					
	KIHM TH.	88079					
	KILGUS G.	88107					
	KIM J.	88029					
	KIM T.	88118					
	KIM W.	88034	88045				
	KINNEY E.R.	88047					
	KIRICHENKO V.V.	88038					
	KISS A.Z.	88064					
	KITAZAWA H.	88048					
	KITWANGA S.W.	88006					
	KNEISSL U.	88097	88100	88107	88118		
	KNOPFLE K.T.	88079	88118				
	KOLESNIKOV L.JA.	88009	88011	88012	88019	88021	88026
	KOLTAY E.	88064					
	KONDRAT'EV R.L.	88079					
	KONNO O.	88029	88035	88039			
	KONONOV V.N.	88098					
	KONVALOV O.G.	88008					
	KOTLJAR V.V.	88011					
	KOVASH M.A.	88034	88045				
	KOWALSKI S.	88050					
	KRAFT O.E.	88081					
	KRAMER G.J.	88016					
	KRATZ K.L.	88052					
	KRAUSHAAR J.J.	88080					
	KRECHETOV JU.F.	88001					
	KREMER R.M.	88044					
	KUEHNER J.A.	88015					
	KUHN S.	88117					
	KUO P.C.-K.	88063					
	KURJAN P.M.	88054					
	KWATO NJOCK M.	88032					

L	LAGET J.M.	88002	88013	88014	88024
	LAMBERT J.	88004			
	LANEN J.B.J.M.	88016			
	LANGENBRUNNER J.L.	88017	88117		
	LAPIKAS L.	88016	88033	88036	88116
	LAWSON R.D.	88074			
	LECONTE P.	88093	88104		
	LEIDEMANN W.	88002			
	LEIST B.	88052			
	LELEUX P.	88006			
	LEPRETRE A.	88024			
	LICHTENSTADT J.	88004			
	LIESENFELD G.	88037			
	LIKHACHEV V.P.	88027			
	LINDENSTRUTH S.	88097			
	LINDGREN R.A.	88030	88074		
	LIPNIK P.	88006			
	LISIN V.P.	88079			
	LJAKHNO JU.P.	88021			
	LOURIE R.W.	88050			
	LUNG A.	88004			

M	MACGREGOR I.J.D.	88037			
	MACKLIN R.L.	88055	88095		
	MACQ P.	88006			
	MAEDA K.	88029	88039		
	MAGNON A.	88013	88071		
	MALEC V.F.	88021			
	MARCHAND C.	88013	88071		
	MARCHLENSKI D.G.	88034	88045		
	MAREKHIN S.V.	88008			
	MARTINO J.	88072			
	MARTINS J.B.	88101			
	MARUYAMA X.K.	88074			
	MATTHEWS J.L.	88047			
	MAUREL M.	88032			
	MAVIS D.G.	88046			
	MAZAN'KO B.V.	88025	88086		
	MCCARTHY J.S.	88002	88007		
	MCGEORGE J.C.	88037	88040		
	MCGILL J.A.	88014			
	MCINTYRE E.K.	88020			
	MCKEOWN R.D.	88031			
	MCLEAN D.	88039			
	MCNEIL K.G.	88042			
	MECHTEL G.H.	88002	88007		
	MEDVEDEV V.I.	88078			
	MEOT V.	88072	88092	88104	
	MERTELMEIER T.	88017			
	MEYER H.D.	88010			
	MICHEL R.P.	88080			
	MILLER B.L.	88092			
	MILLER J.P.	88020			
	MILLIMAN T.E.	88092			
	MILNE E.A.	88042			
	MILNER R.G.	88031			
	MISHRA C.S.	88014			
	MITCHELL J.H.	88080			
	MITCHELL L.W.	88044	88052		
	MIYASE H.	88069	88085		
	MIZE W.K.	88014			
	MONAHAN J.E.	88060			
	MOREH R.	88003	88065	88067	88115
	MORFORD L.J.	88068			



	MORGENSTERN J.	88013	88031	88071
	MORI K.	88035		
	MORRISON G.C.	88074		
	MOUGEY J.	88013	88071	
	MURAKAMI T.	88068		
N	NAGORNYJ S.I.	88019		
	NAMAI K.	88085		
	NEDOREZOV V.G.	88103		
	NEMASHKALO B.A.	88077	88114	
	NIFENECKER H.	88032		
	NIKITIN V.A.	88021		
	NIKOLENKO D.M.	88078		
	NINANE A.	88006		
	NOGA V.I.	88103		
	NOMURA A.	88085		
	NOMURA I.	88029	88035	88039
	NOMURA M.	88069		
	NOOREN G.J.L.	88062		
O	O'KEEFE G.J.	88029	88035	
	OFFERMANN E.A.J.M.	88074		
	OVCHINNIK V.D.	88019		
	OWENS R.O.	88037	88047	
P	PACATI F.D.	88071		
	PAISS Y.	88089		
	PAPANICOLAS C.N.	88092		
	PARKER B.	88023		
	PARZHICKIJ S.S.	88081	88082	
	PASCHOAL S.L.	88102		
	PASHCHUK S.A.	88027	88103	
	PAULETTA G.	88014		
	PAVEL T.J.	88002	88007	
	PENNINGA J.	88091		
	PESTIEAV J.	88006		
	PETERSON G.A.	88004	88023	88030 88041
	PETERSON R.J.	88080	88089	
	PETRATOS G.G.	88004		
	PHAN XUAN HO	88072	88093	88104
	PICARD J.	88013		
	PICOZZA P.	88022		
	PIGNAULT G.	88014	88047	
	PINHEIRO FILHO J.D.	88101		
	PINSTON J.A.	88032		
	PISKAREV I.M.	88061		
	PITCARD J.	88071		
	PITTS W.K.	88010		
	PITZ H.H.	88097	88107	
	PLATCHKOV S.K.	88072	88093	88104
	POLETAEV E.D.	88098		
	POLISHCHUK V.N.	88025	88086	
	POPOV S.G.	88078		
	POPOVA N.I.	88078		
	POTTERVELD D.H.	88031		
	POTYLICIN A.P.	88001		
	PROSPERI D.	88022		
	PUGACH V.M.	88078		
Q	QUINN B.P.	88002	88007	
	QUINT E.N.M.	88016	88033	88036 88116

R	RACKERS T.W.	88034	88045				
	RAHBAR A.	88004					
	RAKHMANTOV I.B.	88087					
	RAMAN S.	88072					
	RANGACHARYULU C.	88084					
	RANJUK JU.N.	88103					
	RASSOOL R.P.	88029	88035	88042			
	REFFAY-PIKERDEN D.	88013	88071				
	RICCO G.	88049					
	RICHTER A.	88107					
	RIJNEVELD H.	88091					
	RIZVI I.A.	88096					
	ROCK S.E.	88004					
	ROLFS C.	88028	88059				
	ROZENZWEIG D.P.	88068					
	RUBASHKIN A.L.	88009	88011	88012	88019	88021	88026
	RUDNIKOV V.E.	88099	88108				
	RULLHUSEN P.	88110					
	RYAN P.J.	88023					
	RYCKBOSCH D.	88024	88043				

S	SAHA A.	88057					
	SAIDGAREEV V.M.	88106					
	SALEM S.	88041					
	SANDEFUR W.M.	88067					
	SANTOS F.D.	88010					
	SANZONE M.	88049					
	SANZONE-ARENHOVEL M.	88105					
	SAPP W.W.	88047					
	SARGENT C.P.	88050					
	SARGOOD D.G.	88083					
	SARUEV G.A.	88001					
	SAVAGE M.J.	88052					
	SAVICKIJ G.A.	88027	88103				
	SCHAERF C.	88022	88101				
	SCHELHAAS K.P.	88105					
	SCHMALBROCK P.	88034					
	SCHOCH B.	88037	88040				
	SCHRODER U.	88059					
	SCHULZ H.J.	88079					
	SCHUMACHER M.	88105					
	SCHUSSLER F.	88032					
	SCHWANDT P.	88010					
	SCOTT A.F.	88083					
	SEEMANN U.	88097	88100				
	SEGEL R.E.	88031	88060				
	SEIDL F.	88031					
	SELIG A.M.	88073					
	SELLSCHOP J.P.F.	88070					
	SELLYEV W.C.	88065	88067	88115			
	SERGIENKO V.P.	88086					
	SETH K.K.	88057					
	SHEBEKO A.V.	88011					
	SHEBEKO K.V.	88077					
	SHERMAN N.K.	88063	88111				
	SHEVCHENKO N.G.	88025	88086				
	SHOTTER A.C.	88037	88040				
	SICK I.	88072	88093	88104			
	SIGALOV V.M.	88081					
	SIKORA D.I.	88108					
	SINGH R.K.Y.	88096					
	SINGHAL R.P.	88023	88030	88041			
	SINHA A.	88010					
	SIZOV I.V.	88081	88082				

	SMIRENKIN G.N.	88099	88108					
	SOBER D.I.	88074						
	SOLDATOV A.S.	88099	88108					
	SOMORJAI E.	88064						
	SOOS T.	88047						
	SOROKIN P.V.	88008	88009	88011	88012	88019	88021	88026
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	SOWINSKI J.	88010						
	SPRINGHAM S.V.	88037	88048					
	STEIPER F.	88100						
	STIBUNOV V.N.	88001						
	STOCK R.	88097						
	STOLK A.	88091						
	STORIZHKO V.E.	88077	88114					
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	STOROZHENKO JU.D.	88003						
	STROHER H.	88100						
	SUDA T.	88029	88035	88037				
	SUDDY A.S.	88103						
	SUGAWARA M.	88069	88035					
	SUTTON D.C.	88065	88067	88115				
	SUZUKI T.	88029	88039					
	SZALATA Z.M.	88004						
T	TABACHENKO A.N.	88001						
	TATUTI M.	88049						
	TAMAE T.	88069	88085					
	TANAKA A.	88069	88085					
	TAVARES O.A.P.	88101						
	TENISHEV A.E.	88008						
	TERASAWA T.	88029	88035	88039				
	THOMPSON M.N.	88029	88035	88039	88040			
	TIEGER D.R.	88068						
	TIKKANEN P.	88064						
	TILLEY D.R.	88017	88117					
	TIMMERMAN R.	88059						
	TIMOKHOV V.M.	88098						
	TIMS S.G.	88083						
	TINGWELL C.I.W.	88080						
	TOPOROV D.K.	88078						
	TORIZUKA Y.	88029	88035	88039				
	TRAUTVETTER H.F.	88028	88059					
	TROFIMOV JU.N.	88094	88109					
	TRUDEL A.J.	88015						
	TSUBOTA H.	88059	88085					
	TURCK-CHIEZE S.	88013	88071					
	TURLEY R.S.	88047						
U	UENG T.S.	88002	88007					
	ULMER P.E.	88058						
	URIN M.G.	88077						
V	VAN BIBBER K.	88004						
	VAN CAMP E.	88043						
	VAN DE VYVER P.	88043						
	VAN DEN BRAND J.E.J.	88016						
	VAN DER LEUN G.	88062	88066					
	VAN DER STEENHOVEN S.	88016	88033	88036	88057	88116		
	VAN HEERDEN I.J.	88010						
	VAN HIENEN J.F.A.	88074						
	VAN HOOREBEKE L.	88043						
	VAN OTTEN P.	88043						

	VAN PRUISSEN O.P.	88062					
	VARTAPETJAN G.A.	88088					
	VERHEUL H.	88091					
	VERNIN P.	88013	88071				
	VETTERLI M.C.	88015					
	VEYSSIERE A.	88024					
	VINOKUROV E.A.	88021					
	VLADIMIROV JU.V.	88027					
	VNUKOV I.E.	88001					
	VODHANEL R.	88065	88115				
	VOGELAAR R.B.	88052					
	VOGT J.M.	88037					
	VOJCEKHOVSKIJ B.B.	88078					
	VOLOSHCHUK V.I.	88021	88038				
	VON BRETANO P.	88097	88107				
	VORLET J.P.	88032					
W	WACHTER B.	88017					
	WALKER R.C.	88031					
	WALLACE P.A.	88037					
	WANG T.R.	88046					
	WARWER D.	88020					
	WAUTERS P.	88006					
	WEBER T.	88100	88118				
	WEINSTEIN L.	88050					
	WELLER H.R.	88015	88017	88117			
	WENDER S.A.	88068					
	WESSELBORG C.	88097	88107				
	WHISNANT C.S.	88014					
	WHITEHOUSE D.A.	88020					
	WHITLOW S.M.	88014					
	WHITNEY R.R.	88002	88007				
	WHITTLE B.	88070					
	WHITTON R.M.	88015	88117				
	WIELOCH-LAUFENBERG N.	88105					
	WIESCHER M.	88045	88052				
	WILDENTHAL B.H.	88067	88113				
	WILKE W.	88100	88118				
	WILLIAMSON S.E.	88093	88104				
	WINTERS R.R.	88055					
	WISE J.E.	88092					
	WISSINK S.W.	88046					
	WOLF A.	88003					
	WOLF F.	88105					
Y	YOKOKAWA J.	88029	88039				
	YORKSTON J.	88040					
Z	ZACHAROV I.E.	88073					
	ZAJAC A.A.	88019					
	ZEIDMAN B.	88031	88074				
	ZELL K.O.	88097					
	ZHEBROVSKIJ JU.V.	88009	88011	88012	88019	88021	88026
	ZIEGLER B.	88105					
	ZOLENKO V.A.	88019	88021				
	ZURMUHL U.	88105					
	ZYBALOV A.A.	88008					

VII. БИБЛИОГРАФИЯ РАБОТ ПО ТЕМЕ  
"ЭЛЕКТРОМАГНИТНЫЕ ВЗАИМО-  
ДЕЙСТВИЯ ЯДЕР И СМЕЖНЫЕ  
ОБЛАСТИ" ИЗ ЗАРУБЕЖНЫХ БАЗ  
ДАННЫХ  
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Настоящий раздел содержит библиографию работ по указанной теме, систематизированных в соответствии с использованными типами поиска.

Использованы следующие дескрипторы:

AU - авторы,  
TI - название работы,  
YR - дата,  
MJ - ключевые слова,  
NT - тип работы,  
TY - организация, адрес.

Номер работы представлен в виде NNnnn, где NN - порядковый номер информационного бюллетеня (в данном случае - 12), а nnn - порядковый номер работы в библиографии.

Кроме информации по указанным и ряду дополнительных специальных идентификаторов в ЦДФЭ имеются аннотации работ.

BIBLIOGRAPHY OF THE WORKS  
ON THE THEME "ELECTROMAG-  
NETIC INTERACTIONS OF NUC-  
LEI AND RELATED TOPICS"  
FROM FOREIGN DATA BASES  
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The present part contains bibliography of the works on the theme pointed out systematized in accordance with search modes have been used.

The following identifiers are used.

AU - authors,  
TI - title of the work,  
YR - date,  
MJ - keywords,  
NT - type of the work,  
TY - organization, adress.

The work's number is NNnnn, where NN - is the index number of information bulletin (in that case - 12), nnn - is the index number of work in bibliography.

CDFE have the abstracts of the works besides the information on pointed out and some additional special identifiers.

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- 12001 AU Holt R.J.  
TI Electro- and Photonuclear Physics with Polarized Beams and Targets.  
YR 1987  
MJ Deuterium-Target, Electron-Deuteron-Interaction, Helium-3-Target, Hydrogen, Lead-206-Target, Lead-208-Target, Neutrons, Elastic-Scattering, Electromagnetic-Form-Factors, Giant-Resonance, Photoneutrons, Photonuclear-Reactions, Polarized-Beams, Polarized-Targets.  
NT International Symposium on Modern Developments in Nuclear Physics, Novosibirsk, USSR.  
IN Argonne National Lab. Department of Energy, Washington, DC. 001960000 0448000.
- 12002 AU Vdovin A.I., Ponomarev V.Y., Velchev C.  
TI Magnetic Resonance in Pb-206.  
YR 1986  
MJ Lead-206, Energy-Level-Density, Excited-States, Gamma-Radiation, Ground-States, M1-Transitions, MeV-Range-01-10, Phonons, Probability, Quasiparticle-Phonon-Model, Random-Phase-Approximation, Strength-Functions, Wave-Functions.  
NT In Russian Submitted to the Journal J. Phys. G: Nucl. Phys. .  
IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12003 TI Nuclear Structure Influence On the Missing Of M1 Strenght in (p, p') Reaction.  
YR 1986  
MJ Proton-Reactions, Zirconium-90-Target, Zirconium-92-Target, Zirconium-94-Target, Zirconium-96-Target, Angular-Distribution, Differential-Cross-Section, Excited-States, Giant-Resonance, Inelastic-Scattering, M1-Transitions, MeV-Range-100-1000, Nuclear-Structure, Nucleon-Nucleon-Interactions, Probability, Quasiparticle-Phonon-Model, Strength-Functions, Theoretical-Data, Wave-Functions.  
NT Submitted to the Journal Yad. Fiz. .  
IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12004 AU Ponomarev V.Y., Ershov S.N., Gareev F.A., Vdovin A.I.  
TI Excitation of Magnetic Resonances in Zr-90 by the Inelastic Proton Scattering.  
YR 1983  
MJ Proton-Reactions, Zirconium-90, Zirconium-90-Target, Cross-Sections, Distorted-Wave-Theory, Excitation, Impulse-Approximation, Inelastic-Scattering, M1-Transitions, M2-Transitions, MeV-Range-100-1000, Probability, Small-Angle-Scattering, Theoretical-Data.  
NT International Symposium on Highly Excited States and Nuclear Structure. Orsay, France.  
IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12005 AU Marty N., Djalali C., Morlet M., Willis A., Jourdatn J.C.  
TI Proton Excitation of the M1 Resonances in the Ni Isotopes.  
YR 1982  
MJ Nickel-58, Nickel-58-Target, Nickel-60, Nickel-60-Target, Nickel-62, Nickel-62-Target, Nickel-64, Nickel-64-Target, Proton-Reactions, Cross-Sections, Energy-Levels, Experimental-Data, Giant-Resonance, Inelastic-Scattering, M1-Transitions, Mev-Range-100-1000.  
IN Paris-11 Univ. Orsay (France). Inst. de Physique Nucleaire. 055555003 5068000.
- 12006 AU Meuer D.  
TI Study of Transversal Nuclear Excitations in Zr-90 and Ce-140 by High-Resolution Inelastic Electron Scattering.  
YR 1981  
MJ Cerium-140, Cerium-140-Target, Electron-Reactions, Zirconium-90, Zirconium-90-Target, Excitation, DWBA, Differential-Cross-Sections, Electromagnetic-Form-Factors, Electron-Spectra, Electrons, Energy-Dependence, Energy-Levels, Energy-Level-Density, Excited-States, Experimental-Data, Inelastic-Scattering, Limiting-Values, M1-Transitions, M2-Transitions, MeV-Range-10-100, Parity, Random-Phase-Approximation, Spin, Strength-Functions.  
NT In German.  
IN Technische Hochschule, Darmstadt (Germany, F.R.). Fachbereich Physik. 017105018 6098200.

- 12007 AU Ponomarev V.Y., Vdovin A.I.  
 TI Electroexcitation of Magnetic Resonances in Spherical Nuclei.  
 YR 1981  
 MJ Giant-Resonance, Zirconium-90-Target, Zirconium-90, Zirconium-92, Zirconium-94, Cerium-140-Target, Electromagnetic-Form-Factors, Electron-Reactions, Excited-States, Lead-208-Target, M1-Transitions, M2-Transitions, Nickel-58-Target, Nuclear-Structure, Quasi-Elastic-Scattering, Quasiparticle-Phonon-Model, Reviews, Spherical-Model, Inelastic-Scattering.  
 IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12008 AU Vdovin A.I., Ponomarev V.Y., Stoyanov C.  
 TI High-Lying M1 States of Spherical Nuclei.  
 YR 1981  
 MJ Lead-208-Target, Zirconium-90-Target, Back Scattering, DWBA, Electron-Reactions, Inelastic-Scattering, M1-Transitions, Quasiparticle-Phonon-Model, Random-Phase-Approximation, Spherical-Model, Strength-Functions, Excitation.  
 NT In Russian.  
 IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12009 AU Vdovin A.I., Ponomarev V.Y., Shilov V.M.  
 TI Electroexcitation of M1 and M2 Resonances in Spherical Nuclei.  
 YR 1980  
 MJ Heavy-nuclei, Intermediate-Mass-Nuclei, Differential-Cross-Sections, Electron-Reactions, Excited-States, Form-Factors, Inelastic-Scattering, Mass-Number, MeV-Range, M1-Transitions, M2-Transitions, Quasiparticle-Phonon-Model, Spherical-Model, Targets.  
 NT In Russian.  
 IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12010 AU Holt R.J.  
 TI Threshold Photoneutron Angular Distribution and Polarization Studies of Nuclei.  
 YR 1980  
 MJ Lead-208, Lead-208-Target, Photoneuclear-Reactions, Oxygen-17, Oxygen-17-Target, Nickel-60, Nickel-60-Target, Angular-Distribution, Energy-Levels, Experimental-Data, Lead-207, Photoneutrons, Polarization, Resonance, Differential-Cross-Sections, Oxygen-16, Deuterium-Target, Hydrogen, Giant-Resonance, Nickel-59.  
 NT Conference on Application of Accelerators in Research an Industry, Denton, TX, USA.  
 IN Argonne National Lab. 11. Department of Energy, Washington, Denton, DC. 00:960000 0448000.

VII. 2. МЕТОД МЕЧЕННЫХ ФОТОНОВ

Tagged Photon Method

- 12011 AU Babinet R.  
 TI Study of Strangeness in Light Nuclei: Perspectives in (E,E').  
 YR 1987  
 MJ Hypernuclei, Cross-Sections, Electron-Reactions, Electroproduction, Form-Factors, Momentum-Transfer, Photoneuclear-Reactions, Photoproduction, Reviews, Tagged-Photon-Method.  
 NT In French Workshop on Intermediate Energies, Grenoble, France.  
 IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Dept. de Physique Nucleaire. 056220006 1405000.
- 12012 AU Koike M.  
 TI High Energy Nuclear Collective Effects in Photo-Nuclear Reactions.  
 YR 1987  
 MJ Photoneuclear-Reactions, Bag-Model, Collective-Model, Energy-Spectra, Evaporation-Model, Fireball-Model, MeV-Range-100-1000, Nuclear-Matter, Protons, Quantum-Chromodynamics, Tagged-Photon-Method.  
 IN Tokyo Univ. (Japan). Inst. for Nuclear Study. 016818012 6269600.
- 12013 AU Kato S., Okuno H.

- TI Recent Experiments on Photonuclear Reactions at the Tokyo 1.3 GeV Electron Synchrotron.  
YR 1986  
MJ Tokyo-Synchrotron, Photonuclear-Reactions, Berillium-9-Target, Deuterium-Target, Deuterons, Helium-4-Target, Nitrogen-14-Target, Photon-Beams, Pions, Polaizer-Beams, Tagged-Photon-Method.  
IN Tokyo Univ. (Japan). Inst. for Nuclear Study. 015818012 6269600.
- 12014 AU Schuhl C.  
TI Photonuclear and Electronuclear Saclay's Activities.  
YR 1986  
MJ Saclay-Linac, Helium-3-Target, Cerium-140-Target, Deuterium-Target, Elastic-Scattering, Electron-Reactions, Form-Factors, Osmium-Isotopes, Photofission, Photonuclear-Reactions, Pions-Neutral, Platinum-Isotopes, Research-Programs, Tagged-Photon-Method, Tritium, Zirconium-90-Target.  
NT Gordon Research Conferens on Photonuclear Reactions, Plymouth, NH, USA, Aug 1986.  
IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Inst. de Recherche Fondamentale. 056220049 9100903.
- 12015 AU Maximon L.S., Miniac A., Aniel T., Ganz E.  
TI Tagged Photons: An Analytstis of the Bremsstrahlung Cross Section.  
YR 1987  
MJ Bremsstrahlung, Differential-Cross-Sections, Reprints.  
NT Final rept.  
IN National Bureau of Standards (NML), Gaithersburg, MD. Center for Radiation Research. 082042009.
- 12016 AU Arakeiyan E.A., Bayatyan G.I., Vartanyan G.S.  
TI Tagged Photon Beam on the Extracted Rarefied Electron Beam of the Erevan Synchrotron.  
YR 1984  
MJ Erevan-Synchrotron, Beam-Extraction, Beam-Production, Beam-Profiles, Electron-Beams, Energy-Resolution, GeV-Range-01-10, Milli-Amp-Beam-Currents, Photon-Beams, Secondary-Beams, Tagged-Photon-Method.  
NT In Russian.  
IN Tsentral'nyi Nauchno-Issledovatel'skii Inst. Informatsii i Tekhniko-Ekonomicheskikh Issledovaniy po Atomnoi Nauke i Tekhnike, Moscow (USSR). \*Erevanskij Fizicheskij Inst. (USSR). 087683000 6339400.
- 12017 AU Homma S, Koike M., Okuno H., Sudo M., Torikoshi M.  
TI Photodisintegration of Two-Nucleon System in Helium Nucleus.  
YR 1985  
MJ Helium-4-Target, Photonuclear-Reactions, Angular-Distribution, Breakup-Reactions, Cluster-Model, Comparative-Evaluations, Deuterons, Experimental-Data, MeV-Range-100-1000, Protons, Tagged-Photon-Method, Two-Body-Problem.  
IN Tokyo Univ. (Japan). Inst for Nuclear Study. 016818012 6269600.
- 12018 AU Homma S.  
TI (Gamma, p) Experiments on Nuclei in the Delta Region.  
YR 1985  
MJ Beryllium-9-Target, Carbon-12-Target, Deuterium-Target, Helium-4-Target, Oxygen-16-Target, Angular-Distribution, Cluster-Model, Differential-Cross-Sections, Experimental-Data, Knock-out-Reactions, MeV-Range-100-1000, N-star-resonances, Neutrons, Photonuclear-Reactions, Pions-Minus, Proton-Spectra, Tagged-Photon-Method.  
IN Tokyo Univ. (Japan). Inst. for Nuclear Study. 016818012 6269600.
- 12019 AU Bergere R.  
TI Saclay Contribution to the Measurement of the Total Photonuclear Cross Section of Nuclei in the Delta-Resonance Region.  
YR 1985  
MJ Photonuclear-Reactions, Delta-1236-Resonances, Four-Pi-Counting, MeV-Rrange-100-1000, Monochromatic-Radiation, Reviews, Tagged-Photon-Method, Total-Cross-Sections.  
NT Workshop on Perspectives in Nuclear Phisics at Intermediate Energies, Trieste, Italy, 25 Mar 1985.  
IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). 065220000 1396000.
- 12020 AU Tamás G., Berman B.L.



- TI Positrons at CEBAF: Positron Working Group Report.  
 YR 1985  
 MJ Positron-Beams, Positrons, Annihilation, Gamma-Radiation, Particle-Production, Positron Reactions, Tagged-Photon-Method.  
 NT CEBAF Summer Workshop, Newport News, VA, USA, 3 JUN 1985.  
 IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Inst. de Recherche Fondamentale. 056220049 9100903.
- 12021 AU Kato S.  
 TI Recent Experimental Results at Tokyo Electron Synchrotron.  
 YR 1984  
 MJ Tokyo Synchrotron, Dibaryon-Resonances, Deuterium-Target, Photon-Proton-Interactions, Photons, Photonuclear-Reactions, Photoproduction, Pions, Research-Programs, Storage-Rings, Tagged-Photon-Method, X-Radiation.  
 IN Tokyo Univ. (Japan). Inst. for Nuclear Study. 016818012 6269600.
- 12022 AU Dowell D.H., Fineman B., Giordano G., Kistner O.S., Matone G.  
 TI Laser-Electron-Gamma-Source. Progress Report, July 1986.  
 YR 1986  
 MJ Gamma-Sources, Compton-Effect, Electron-Beams, Experiment-Planning, Gamma-Spectrometers, Lasers, Photonuclear-Reactions, Storage-Rings, Tagged-Photon-Method, Testing, Ultraviolet-Radiation.  
 IN Brookhaven National Lab., Upton, NY.\*Department of Energy, Washington, DC. 004545000 0936000.
- 12023 AU Jenkins T.L., Frye G.M., Hall C.J., Owens A., Pendleton G.N.  
 TI Operating Characteristics of a Prototype High Energy Gamma-Ray Telescope.  
 YR 1985  
 MJ Gamma-Astronomy, Cosmic-Photons, Feasibility-Studies, MeV-Range-10-100, MeV-Range-100-1000, Resolution, Tagged-Photon-Method, Telescope-Counters.  
 NT 19. International Cosmic Ray Conference, La Jolla, CA, USA, 11 Aug 1985.  
 IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Inst. de Recherche Fondamentale. 056220049 9100903.
- 12024 AU Homma S., Kanazawa M., Koike M.  
 TI ( $\Delta$ , p) Reaction on Light Nuclei in the  $\Delta$  (1232) Resonance Region.  
 YR 1984  
 MJ Photonuclear-Reactions, Beryllium-9-Target, Carbon-12-Target,  $\Delta$ -1236-Resonances, Deuterium-Target, Differential-Cross-Sections, Energy-Spectra, Excitation-Functions, Experimental-Data, Helium-4-Target, Hydrogen-1-Target, Linear-Momentum, MeV-Range-100-1000, Oxygen-16-Target, Photoproduction, Pions, Proton-Spectra, Protons, Quasi-Free-Reactions, Tagged-Photon-Method.  
 IN Tokyo Univ. (Japan). Inst. for Nuclear Study. 016818012 6269600.
- 12025 AU Botton N.  
 TI Pion Photoproduction in Nuclei.  
 YR 1985  
 MJ Aluminium-28-Target, Carbon-12-Target, Deuterium-Target, Helium-3-Target, Helium-4-Target, Pions, Photoproduction, Cross-Sections, MeV-Range-100-1000, Pion-Detection, Tagged-Photon-Method.  
 NT International School for Intermediate Energy Nuclear Physics, Verona, Italy, 20 June 1985.  
 IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Inst. de Recherche Fondamentale. 056220049 9100903.
- 12026 AU Augit G., Bloch A., Botton N.  
 TI Near Threshold Neutral Pions Photoproduction in Hydrogen.  
 YR 1984  
 MJ Hydrogen-1-Target, Pions-Neutral, Photoproduction, Cross-Sections, Experimental-Data, MeV-Range-100-1000, Monochromatic-Radiation, Tagged-Photon-Method.  
 IN CE Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). 056220000 1396000.
- 12027 AU Homma S., Kanazawa M., Koike M., Okuno H.  
 TI Photoemission of Two Nucleons from Be-9 in the  $\Delta$  (1232) Resonance Region.  
 YR 1984

- MJ Beryllium-9-Target, Angular-Correlation, Deuterions, Experimental-Data, Photoneutrons, Photonuclear-Reactions, Photoprotons, Quasi-Free-Reactions, Tagged-Photon-Method.  
IN Tokyo Univ. (Japan). Inst. for Nuclear Study. 016818012 6269600.
- 12028 AU Bharda S., Appel J.A., Bartlett D.F., Denby B.H., Biel J.  
TI Study of the Inclusive Lambda, Anti Lambda Production in Diffractive Gamma-p Interactions.  
YR 1985  
MJ Antilambda-Particles, Lambda-Particles, Experimental-Data, Mass-Spectra, Photon-Proton-Interactions, Photoproduction, Tagged-Photon-Method.  
NT 12 International Symposium on Lepton and Photon Interactions at High Energies, Kyoto, Japan, 19 Aug 1985.  
IN Colorado Univ. at Boulder. \*California Univ. Santa Barbara. \*Carleton Univ., Ottawa, Ontario (Canada). \*Fermi National Accelerator Lab., Batavia, IL. \*National Research Council of Canada, Ottawa, Ontario. \*Oklahoma Univ. Norman. \*Department of Energy, Washington, DC. 068646000 1832000.
- 12029 AU Bhadra S., Appel J.A., Bartlett D.F., Denby B.H., Biel J.  
TI Study of the Inclusive K-S, K-0 Production in Diffractive Gamma-p Interactions.  
YR 1985  
MJ Kaons-Neutral-Short-Lived, Energy-Spectra, Experimental-Data, Mass-Spectra, Photon-Proton-Interactions, Photoproduction, Tagged-Photon-Method.  
NT 12. International Symposium on Lepton and Photon Interactions at High Energies, Kyoto, Japan, 19 Aug 1985.  
IN Colorado Univ. at Boulder. \*California Univ. Santa Barbara. \*Carleton Univ., Ottawa, Ontario (Canada). \*Fermi National Accelerator Lab., Batavia, IL. \*National Research Council of Canada, Ottawa, Ontario. \*Oklahoma Univ. Norman. \*Department of Energy, Washington, DC. 068646000 1832000.
- 12030 AU Adler J.O., Hansen K., Lindgren K.R.  
TI Magnetic Electron Spectrometer for Photonuclear Experiments at MAX.  
YR 1984  
MJ Magnetic-Spectrometers, Accelerators, Electron-Spectrometers, Energy-Resolution, Magnets, Tagged-Photon-Method, Time-Resolution, Trajectories.  
IN Lund Univ. (Sweden). Fysiska Institutionen. 016503016 9860032.

VII. 3. Ladon

Ladon

- 12031 AU Grant J.A.  
TI Geomorphic Evolution of Eastern Margaritifer Sinus, MARS. Part 1.  
YR 1987  
MJ Craters, Drainage, Geomorphology, Mapping, Mars-(Planet), Planetary-Geology, Structural-Properties-(Geology), Climatology, Evolution-(Development), Photointerpretation, Plates-(Tectonics), Terrain.  
NT In Its Advances in Planetary Geology, 259p.  
IN National Aeronautics and Space Administration, Washington, DC. 011249000 NC452981.
- 12032 AU De Pascale M.P., Giordano G., Matone G., Picozza P., Babusci D.  
TI Measurement of Deuteron Photodisintegration Asymmetry at Es (Gamma)=19.8, 29.0 and 38.6 MeV.  
YR 1983  
MJ Deuterium-Target, Photonuclear-Reactions, Angular-Distribution, Breakup-Reactions, Differential-Cross-Sections, Experimental-Data, MeV-Range-10-100.  
IN Istituto Nazionale di Fisica Nucleare, Rome (Italy). 014256000 3383000.
- 12033 AU Caloi R., Casano L., Federici L., Frullani S., Giordano G.  
TI Resonant Nuclear Scattering of Gamma-Rays as a Tool to Investigate the Ladon beam Characteristics.  
YR 1978  
MJ Carbon-12-Target, Photonuclear-Reactions, Energy, Gamma-Sources, Photon-Beams, Resonance, Spin-Orientation, Resonance-Scattering, Beam-Monitoring, Polarimeters.  
IN Istituto Nazionale di Fisica Nucleare, Frascati (Italy). Lab. Nazionale di Frascati. 063941001 3376500.

- 12034 AU Sandorfi A.M., Levine M.J., Thorn C.E., Giordano G., Matone G.  
 TI Brookhaven Medium-Energy Gamma-Ray Project.  
 YR 1982.  
 MJ Gamma-Sources, N SL S, MeV-Range-100-1000, Polarized-Beams, Monochromatic-Radiation, Beam-Production.  
 NT Workshop on the Use of Electron Rings for Nuclear Physics Research, Lund, Sweden, 5 oct 1982.  
 IN Brookhaven National Lab. Upton, NY. Istituto Nazionale di Fizica Nucleare, Frascati (Italy). Lab. Nazionale di Frascati. Department of Energy, Washington, DC. 004545000 0936000.

VII. 4. Тормозное излучение  
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Bremsstrahlung  
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- 12035 AU Balk O.A., Hochhaeuser E.  
 TI Radiation-Induced Light Emission in Silica Core Fibers.  
 YR 1987  
 MJ Radiation-Dosage, Pulsed-Radiation, Silicon-Dioxide, Fibers, Fiber-Orientation, Light-Emission, Bremsstrahlung, Transmission-Loss, Wavelengths.  
 IN Messerschmitt-Boelkow-Block G.m.b.H., Munich (Germany, F. R.). Information und Documentation. 064776008.
- 12036 AU Hubbel J.H.  
 TI Industrial, Agricultural, and Medical Applications of Radiation Metrology: Current Status and Prospects for the 1990's.  
 YR 1987  
 MJ X-rays, Density, Gamma-rays, Gauges, Metrology.  
 NT Final rept..  
 IN National Bureau of Standards (NBS), Gaithersburg, MD. Ionizing Radiation Physics Div. 082042026.
- 12037 AU Ratnikov F.D.  
 TI Bremsstrahlung Correction in the Neutral Pions  $\rightarrow e^+ + e^-$  Decay.  
 YR 1986  
 MJ Pions-Neutral, Branching-Ratio, Corrections, Decay-Amplitudes, Electrons, Internal-Bremsstrahlung, Leptonic-Decay, Mass-Resolution, Particle-Widths, Photons, Positrons, Radiative-Decay.  
 IN Gosudarstvennyi Komitet Po Ispol'zovaniyu Atomnoj Energii SSSR, Moscow. Inst. Teoreticheskoy i Experimental'noy Fiziki. 011711002 2848000.
- 12038 AU Martins J.B.  
 TI (Gamma,n) Reaction in Nuclei of the  $12 \leq A \leq 238$  Interval in the Intermediate Energy Region (300 MeV-100 MeV).  
 YR 1974  
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YR 1987  
MJ Electron-Positron-Interactions, Weinberg-Angle, Z-Neutral-Bosons, Angular-Distribution, Annihilation, Asymmetry, Axial-Vector-Currents, Bremsstrahlung, Coupling-Constants, Differential-Cross-Sections, Electromagnetic-Interactions, Energy-Dependence, Excitation-Functions, Experimental-Data, GeV-Range-10-100, Integral-Cross-Sections, Muons-Minus, Muons-Plus, Neutral-Current-Interactions, Pair-Production, Radiative-Corrections, Rest-Mass, Vector-Currents, Weak-Interactions, Weak-Neutral-Currents, Weinberg-Lepton-Model.  
NT Diss.(Dr.rer.nat.), In German.  
IN Technische Hochschule Aachen (Germany, F.R.). Lehrstuhl fuer Experimentalphysik 3B und 3. Physikalisches Inst. 009121033 6088241.
- 12088 AU Zupancic C.  
TI Physical and Statistical Foundation of TeV Muon Spectroscopy.  
YR 1985  
MJ Meson-Spectroscopy, Algorithms, Bremsstrahlung, Design, Differential-Cross-Sections, Electron-Temperature, Energy-Losses, Energy-Resolution, Matrix-Elements, Muons, Scattering, Spectrometers, Statistical-Models, Stopping-Power, Meetings.  
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IN European Organization for Nuclear Research, Geneva (Switzerland). 013577000 2431000.
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TI Production of Positrons with Low Transverse Momentum and Low-Mass Electron-Positron Pairs in Proton-Proton Collisions at a Center-of-Mass Energy of 63 GeV.  
YR 1987  
MJ Proton-Proton-Interactions, Pair-Production, Positrons, Branching-Ratio, Charged-Particles, Differential-Cross-Sections, Effective-Mass, Electrons, Energy-Dependence, Experimental-Data, GeV-Range-10-100, Helicity, Inclusive-Interactions, Mass-Spectra, Multiple-Production, Multiplicity, Pions, Pions-Minus, Pions-Plus, Transverse-Momentum.  
NT Diss.  
IN Lund Univ. (Sweden). Fysiska Institutionen. 016503016 9860032.
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YR 1988  
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IN Lawrence Livermore National Lab., CA.\*Department of Energy, Washington, DC. 068147000 9513035.
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TI Data Library of Gamma-Ray Buildup Factors for Point Isotropic Source. Molybdenum, Tin, Lanthanum, Gadolinium, Tungsten, Lead and Uranium.  
YR 1988  
MJ Buildup, Gamma-Radiation, Compiled-Data, Gadolinium, Lanthanum, Lead, Molybdenum, P-Codes, Radiation-Doses, Theoretical-Data, Tin, Tungsten, Uranium.  
IN Japan Atomic Energy Research Inst., Tokyo. 014802000 3413000.
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TI Bremsstrahlung from Channeled Charged Particles: Application to a Crystal X-Ray Accelerator.  
YR 1987  
MJ Crystal-Lattices, Acceleration, Bremsstrahlung, Channeling, Charged-Particles, Equations-of-Motion, Mean-Free-Path, X-Ray-Sources.  
IN Texas Univ. at Austin. Inst. for Fusion Studies.\*Department of Energy, Washington, DC. 043127103 9512957.
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TI Indented-Anode Diode for HERMES-III.

- YR 1987  
 MJ Linear-Accelerators, Anodes, Beam-Profiles, Bremsstrahlung, Design, Dose-Rates, Electron-Beams, Impedance, Irradiation, Optimization, Semiconductor-Diodes.  
 NT Institute of Electrical and Electronic Engineers Pulsed Power Conference, Arlington, VA, USA, 29 Jun 1987.  
 IN Sandia National Labs., Albuquerque, NM.\*Pulse Sciences, Inc., San Leandro, CA. \*Department of Energy, Washington, DC. 068123000 9511100.
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 TI Development and Testing of the HERMES-III Pulse Forming Transmission Lines.  
 YR 1987  
 MJ High-Voltage-Pulse-Generators, Power-Transmission-Lines, Coaxial-Cables, Electrodes, Electron-Beams, Experimental-Data, Performance-Testing, Switches, Wave-Forms.  
 NT Institute of Electrical and Electronic Engineers Pulsed Power Conference, Arlington, VA, USA, 29 Jun 1987.  
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VII. 5. Мультипольные резонансы

Multipole Resonances

- 12095 AU Hussein M.S.  
 TI Direct Vs Statistical Decay of Nuclear Giant Multipole Resonances.  
 YR 1986  
 MJ Giant-Resonance-Model, Comparative-Evaluations, Decay, Multipoles.  
 IN Sao Paulo Univ. (Brazil). Inst. de Fisica. 014621030 5662400.
- 12096 AU Fuchs K.D.  
 TI Study of the Giant Multipole Resonance Decay in Zr-90 by Means of Particle Angular Correlation Measurements.  
 YR 1984  
 MJ Zirconium-90, Zirconium-90-Target, Giant-Resonance, Alpha-Reactions, Branching-Ratio, Coincidence-Methods, Cross-Sections, Decay, Inelastic-Scattering, Knock-Out-Reactions.  
 NT Thesis, In German  
 IN Erlangen-Nuernberg Univ., Erlangen (Germany, F.R.). Naturwissenschaftliche Fakultät 1 - Mathematik und Physik. 013445003 2396400.
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 TI Hybrid Model for the Decay of Nuclear Giant Resonances.  
 YR 1986  
 MJ Lead-208, Giant-Resonance, Hauser-Feshbach-Theory, Mathematical-Models, Mixing-Ratio, Multipole-Transitions, Random-Phase-Approximation.  
 IN Sao Paulo Univ. (Brazil). Inst. de Fisica. 014621030 5662400.
- 12098 AU Dias H., Arruda-Neto J.D.T., Hussein M.S., Carlson B.V.  
 TI Fission Decay Properties of Nuclear Giant Multipole Resonances.  
 YR 1986  
 MJ Uranium-236, Energy Dependence, Fission, Fission-Barrier, Giant-Resonance-Model, Hauser-Feshbach-Theory, Multipoles, Nuclear-Properties.  
 IN Sao Paulo Univ. (Brazil). Inst. de Fisica. 014621030 5662400.
- 12099 AU Velchev C., Ponomarev V.Y.  
 TI Probability of Two-Phonon State Excitation and Their Contribution into Formation of Giant Multipole Resonances.  
 YR 1986  
 MJ Zirconium-90, Giant-Resonance, Energy-Levels, Matrix-Elements, Multipole-Transitions, Probability, Quasiparticle-Phonon-Model, Wave-Functions.  
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 IN Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics. 014897006 3476000.
- 12100 AU Bracco A., Beene J.R., Bertrand F.E., Halbert M.L., Auble R.L.  
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 YR 1986  
 MJ Lead-208-Target, Giant-Resonance, Branching-Ratio, Experimental-Data, Gamma-Radiation,

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Neutron-Emission, Oxygen-17-Reactions.
- NT International School of Heavy Ion Physics Course on the Response of Nuclei under Extreme Conditions, Erice, Italy, 12 Oct 1986.
- IN Oak Ridge National Lab., TN.\*Milan Univ. (Italy). Dipartimento di Fisica.\*Department of Energy, Washington, DC. 021310000 4832000.
- 12101 AU Tauhata L.  
TI Giant Resonance of Electrical Multipole from Droplet Model.  
YR 1984  
MJ Deformed-Nuclei, Multipolarity, Giant-Resonance-Model, Comparative-Evaluations, Compiled-Data, Coupling, Droplet-Model, Isoectors, Mass-Formulae, Oscillation-Modes, Photonicuclear-Reactions.  
NT Tese (Ph.D.), In Portuguese.  
IN Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro. 00605000 1652000.
- 12102 AU Van-Bibber K., Yearian M.R.  
TI Study of Transfer Reactions and Inelastic Scattering to Giant Multipole Resonances Using a 4 pi Scintillator Array (The Plastic Box): Final Report.  
YR 1986  
MJ Scintillation-Counters, Uranium-238-Target, Giant-Resonance, Alpha-Reactions, Branching-Ratio, Electron-Reactions, Testing.  
IN Stanford Univ., CA. High Energy Physics Lab. \*Department of Energy, Washington, DC. 009225064 5928000.
- 12103 AU Dias H., Hussein M.S., Adhikari S.K.  
TI Collective Doorways and Statistical Doorways: The Decay Properties of Giant Multipole Resonances.  
YR 1985  
MJ Giant-Resonance, Compound-Nuclei, Configuration-Mixing, Decay, Hauser-Feshbach-Theory, Multipoles, Statistics, Theoretical-Data, Total-Cross-Sections.  
IN Sao Paulo Univ. (Brazil). Inst. de Fisica.\*Pernambuco Univ., Recife (Brazil)). Dept. de Fisica. 014621030 5662400.
- 12104 TI RCNP (Research Center for Nuclear Physics, Osaka University, Japan) Annual Report 1983. April 1, 1983-March 31, 1984.  
YR 1984  
MJ Nuclear-Physics, Alpha-Reactions, Beta-Decay, Capture, Cyclotrons, De-Excitation, Deuteron-Reactions, Excited-States, Giant-Resonance, Heavy-Ion-Reactions, Meson-Reactions, Nuclear-Theory, Polarized-Beams, Proton-Reactions, Research-Programs, Scattering, Spectrometers, Transfer-Reactions.  
IN Osaka Univ., Suita (Japan). Research Center for Nuclear Physics. 071095002 9309030.
- 12105 TI RCNP (Research Center for Nuclear Physics, Japan) Annual Report 1982. April 1, 1982 - March 31, 1983.  
YR 1983  
MJ Nuclear-Physics, Alpha-Reactions, Beta-Decay, Breakup-Reactions, Capture, Cyclotrons, De-Excitation, Deuteron-Reactions, Elastic-Scattering, Giant-Resonance, Heavy-Ion-Reactions, Helium-3-Reactions, Inelastic-Scattering, M1-Transitions, Nuclear-Deformation, Nuclear-Theory, Polarized-Beams, Proton-Reactions, Research-Programs, Spectrometers.  
IN Osaka Univ., Suita (Japan). Research Center for Nuclear Physics. 071095002 9309030.
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TI RCNP (Research Center for Nuclear Physics, Japan) Annual Report, 1981: April 1981 - March 1982.  
YR 1982  
MJ Nuclear-Physics, Beta-Decay, Breakup-Reactions, Cyclotrons, De-Excitation, Deuteron-Reactions, Excited-States, Giant-Resonance, Heavy-Ion-Reactions, Helium-3, Magnetic-Spectrometers, Nuclear-Chemistry, Nuclear-Theory, Polarized-Beams, Proton-Reactions, Research-Programs, Spin, Transfer-Reactions.  
IN Osaka Univ., Suita (Japan). Research Center for Nuclear Physics. 071095002 9309030.
- 12107 AU Kihm T.  
TI (e, e'c) Coincidence Experiments on the Decay of the Giant Resonances in Si-28.  
YR 1985

MJ Electron-Reactions, Giant-Resonance, Silicon-28, Silicon-28-Target, Alpha-Decay, Alpha-Particles, Alpha-Spectra, Aluminium-27, Angular-Correlation, Coulomb-Excitation, Differential-Cross-Sections, E0-Transitions, E1-Transitions, E2-Transitions, Electromagnetic-Form-Factors, Electron-Spectra, Electrons, Energy-Spectra, Experimental-Data, Inelastic-Scattering, Knock-Out-Reactions, Level-Widths, Magnesium-24, MeV-Range-100-1000, Proton-Emission-Decay, Proton-Spectra, Protons, Quasi-Elastic-Scattering, Rotational-States, Strength-Functions.

NT Diss. (Dr.rer.nat.), In German.

IN Heidelberg Univ. (Germany, F.R.). Naturwissenschaftliche Gesamtfakultaet. 012073014 9200426.

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TI Isoscalar Giant Vibrations in the Quantized Time-Dependent Deformed Oscillator Model.  
YR 1984

MJ Giant-Resonance, Deformed-Nuclei, Gauge-Invariance, Generator-Coordinate-Method, Harmonic-Oscillator-Models, MeV-Range-01-10, MeV-Range-10-100, Oscillation-Modes, Quantization, Theoretical-Data, Time-Dependence, Trajectories.

IN Strasbourg-1 Univ. (France). Centre de Recherches Nucleaires. 065420002 9100582.

12109 AU Hussein M.S., Franzin V.L.M., Franzin R., Baltz A.J.

TI Small Effects in Sub-Barrier Heavy-Ion Elastic Scattering.

YR 1983

MJ Heavy-Ion-Reactions, Angular-Distribution, Comparative-Evaluations, Corrections, Coulomb-Excitation, Coupled-Channel-Theory, Differential-Cross-Sections, Elastic-Scattering, Giant-Resonance, Octupoles, Optical-Models, Potentials, Quadrupoles, Relativistic-Range, Spin-Orientation, Theoretical-Data.

IN Sao Paulo Univ. (Brazil). Inst. de Fisica. 014621030 5662400.

VII. 6. Фотонные сечения

Photon Cross Sections

12110 AU Berger M.J., Hubbell J.H.

TI XCOM Photon Cross Sections on a Personal Computer.

YR 1987

MJ Photon-Cross-Sections, Scattering, Computation, Pair-production, X-rays, Gamma-Rays, Bremsstrahlung.

NT Sponsored by Department of Energy, Washington, DC. Office of Health and Environmental Research.

IN National Bureau of Standards, Gaithersburg, MD.\*Department of Energy, Washington, DC. Office of Health and Environmental Research. 081914000.

12111 AU Saloman E.B., Hubbell J.H.

TI Critical Analysis of Soft X-ray Cross Section Data.

YR 1987

MJ Photon-Cross-Sections, X-Rays, Reprints.

NT Final Rept.

IN National Bureau of Standards (NML), Gaithersburg, MD. Radiation Physics Div. 082042021.

12112 AU Hubbell J.H., Gerstenberg H.M., Saloman E.B.

TI Bibliography of Photon Total Cross Section (Attenuation Coefficient) Measurements 10 eV to 13.5 GeV.

YR 1986

MJ Photon-Cross-Sections, Far-Ultraviolet-Radiation, X-Rays, Gamma-Rays, Bibliographies, Bremsstrahlung, Attenuation.

NT Sponsored by Department of Energy, Washington, DC., and Office of Naval Research, Arlington, VA.

IN National Bureau of Standards (NML), Gaithersburg, MD. Office of Standard Reference 021. Data.\*Department of Energy, Washington, DC.\*Office of Naval Research, Arlington, VA. 082042011.

12113 AU Seltzer S.M., Berger M.J.

TI Bremsstrahlung Spectra from Electron Interactions with Screened Atomic Nuclei and Orbital Electrons.

YR 1985

- MJ Photon-Cross-Sections, Bremsstrahlung, Electron-Scattering, Reprints.  
 NT Final Rept., Sponsored by Department of Energy, Washington, DC., and Office of Naval Research, Arlington, VA.  
 IN National Bureau of Standards (NML), Gaithersburg, MD. Radiation Physics Div.\*Department of Energy, Washington, DC.\*Office of Naval Research, Arlington, VA. 082042021.
- 12114 AU Hubbell J.H.  
 TI Photon Cross Sections 1 keV to 100 GeV: Current NBS (National Bureau of Standards) Compilation.  
 YR 1984  
 MJ Photon-Cross-Sections, Gamma-Rays, X-Rays, Attenuation, Reprints.  
 NT Final Rept.  
 IN National Bureau of Standards (NML), Gaithersburg, MD. Radiation Physics Div. 082042021.
- 12115 AU Hayward E., Ziegler B.  
 TI Photon Scattering From C-12 and Pb-208 in the Delta-Region.  
 YR 1984  
 MJ Photon-Cross-Sections, Carbon-12, Scattering-Cross-Sections, Dispersion-Relations, Bremsstrahlung, Inelastic-Scattering, Reprints.  
 NT Final Rept. Prepared in Correlation with Max-Planck-Inst. Fuer Chemie, Mainz (Germany, F.R.).  
 IN National Bureau of Standards, Washington, DC. Max-Planck-Inst. Fuer Chemie, Mainz (Germany, F.R.). 004692000.
- 12116 AU Stanley J.H.  
 TI Backscatter Imaging Tomography.  
 YR 1982  
 MJ Nondestructive-Tests, Backscattering, Feasibility, Compton-Effect, Compton-Cross-Sections, Photon-Cross-Sections, Radiation-Measuring-Instruments, X-Rays, Gamma-Rays, Aluminium, Iron, Inspection.  
 NT Final Rept.  
 IN Advanced Research and Applications Corp. Sunnyvale, CA. National Science Foundation, Washington, DC. Div. of Industrial Science and Technological Innovation. 060237000.
- 12117 AU Gimm H.A., Hubbell J.H.  
 TI Total Photon Absorption Cross Section Measurements, Theoretical Analysis and Evaluations for Energies above 10 MeV.  
 YR 1978  
 MJ Absorption-Cross-Sections, Photon-Cross-Sections, Gamma-Cross-Sections, Pair-Production-Reactions, Correction, Tables-Data, Graphs-Charts.  
 IN Max-Planck-Inst. Fuer Chemie, Mainz (Germany, F.R.). National Bureau of Standards, Washington, DC. 017439000.
- 12118 AU MacFarlane R.E., Muir D.W., Boicourt R.M.  
 TI NJOY; Neutron and Photon Cross Sections from ENDF/B.  
 YR 1984  
 MJ Software, Neutron-Transport-Theory, Neutron-Reactions, Computer-Codes, Cross-Sections, Multigroup-Theory, Transport-Theory, Scattering, Doppler-Broadening, Self-Shielding, Photons, N-Codes.  
 NT Software.  
 IN Los Alamos National Lab. NM. Department of Energy, Washington, DC. 072735000 9512470.
- 12119 AU Noonan J., Dechichio D., Scharr K., Scotti N., Chua S.  
 TI Investigate and Develop Mathematical Formulas in Support of Atmospheric Studies.  
 YR 1983  
 MJ Atmospheric-Physics, Numerical-Analysis, Mathematical-Models, Computer-Programs, Data-Acquisition, Atmosphere-Models, Turbulence, Magnetometers, Ionosphere, Density, Electrons, Photon-Cross-Sections, Networks, Magnetosphere, Response, Low-Energy, Flow-Charting, Data-Processing, Data-Bases, Feasibility-Studies, Geophysics.  
 NT Final Rept. Aug 1979-Sep 1982.  
 IN Bedford Research Associates, MA. AIR Force Geophysics Lab. Hansom AFB, MA. 073657000 393743.
- 12120 AU Wadzinski I.H.T., Jasperse J.R.  
 TI Low Energy Electron and Photon Cross Section for 0, N2, and O2 and Related Data.

- YR 1982  
 MJ Ion-Density, Electron-Density, Atoms, Molecules, Energy-Levels, Excitation, Ionization, Solar-Radiation, Ionizing-Radiation, Oxygen, Nitrogen, Graphs.  
 NT Environmental Research Papes.  
 IN Bedford Research Associates, MA. AIR Force Geophysics Lab. Hansom AFB, MA. 073657000
- 12121 AU LI H.H.  
 TI Absorption Coefficient of Alkali Halides. Part 1.  
 YR 1979  
 MJ Alkali-Metal-Compounds, Halides, Absorption-Coefficients, Constants, Photon-Cross-Sections, Ultraviolet-Spectra, Correlation-Techniques, Data-Processing, Phonons, Computations, Surface-Chemistry, Impurities, Crystal-Growth, Crystal-Defects.  
 NT Interim Rept. 1 May 1978 - 30 Apr 1979. See also Part 2, AD-A080 208.  
 IN Center for Information and Numerical Data Analysis and Synthesis, West Lafayette, In. Air Force Office of Scientific Research, Bolling AFB, DC. 050450000 409062.
- 12122 AU Moulton J.R., Wood J.T., Migliorini R.L., Adamson J.R.  
 TI Dod Advanced, Image-Evaluation Program.  
 YR 1974  
 MJ Image-Processing, Optical-Images, Images, Electrooptics, Photons, Photon-Cross-Sections, Prototypes, Test-and-Evaluation.  
 NT Research and Development Technical Rept. Sep 1971 - Jul 1972 on Phase 1.  
 IN Army Electronics Command, Fort Monmouth, NJ. 002519000 037620.
- 12123 AU Stephens D.G.  
 TI An Experimental Investigation of the Flow Field of an Ejector Wing Design Employing a Photon Correlation Laser Velocimeter.  
 YR 1981  
 MJ Flow-Fields, Airfoils, Laser-Velocimeters, Flow-Visualization, Free-Stream, Angle-of-Attack, Wind-Tunnel-Tests, Smoke-Generators, Ejectors, Photon-Cross-Sections.  
 NT Master's Thesis.  
 IN Air Force Inst. of Tech. Wright-Patterson AFB, OH. School of Engineering. 000805002 012225.
- 12124 AU Hayward E.  
 TI The Elastic Photon Scattering Cross Section for C-12 in the Energy Range 20-40 MeV.  
 YR 1979  
 MJ Carbon-12, Scattering-Cross-Sections, Photon-Cross-Sections, Elastic-Scattering, Dispersion-Relations.  
 NT Final Rept.  
 IN National Bureau of Standards, Washington, DC. 004692000.
- 12125 AU Hayward E.  
 TI What's New in Nuclear Photon Scattering.  
 YR 1980  
 MJ Photon-Cross-Sections, Scattering-Cross-Sections, Deuteron-Reactions, Carbon-12, Dispersion-Relations, Quadrupole-Moment, Gamma-Cross-Sections, Reprints.  
 IN National Bureau of Standards, Washington, DC. 004692000.

VII. 7. Фотопотоны

Photoprotons

- 12126 TI Measurement of Cross Sections of Total Nuclear Photon Absorption by the C-12 and Pb-208 Nuclei in the Delta (1232) Region.  
 YR 1985  
 MJ Carbon-12-Target, Lead-208-Target, Photoneuclear-Reactions, Absorption, Experimental-Data, MeV-Range-100-1000, Photoprotons, Pions-Neutral, Total-Cross-Sections.  
 NT In French Biennial Session on Nuclear Physics, Aussois, France, 4 Feb 1985.  
 IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). 056220000 1396000.
- 12127 AU D'Hose N., Audit G., Bloch A.  
 TI Study of the He-3 (gamma,p)np Reaction in the Region of the Resonance Delta (1232).  
 YR 1985  
 MJ Helium-3-Target, Photoneuclear-Reactions, Breakup-Reactions, Differential-Cross-Section-



ons, Energy-Dependence, Experimental-Data, MeV-Range-100-1000, Monochromatic-Radiation, Photoprotons.

NT In French Biennial Session on Nuclear Physics, Aussois, France, 4 Feb 1985.

IN CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). 056220000 1396000.

12128 AU Mecking B.A.

TI Photonuclear Physics with Low Intensity Photon Beams.

YR 1985

MJ Photonuclear-Reactions, Breakup-Reactions, Bremsstrahlung, Counting-Techniques, Deuterium-Target, Deuterons, Helium-3-Target, MeV-Range-100-1000, Photon-Beams, Photon-Photon-Interactions, Photoneutrons, Photoproduction, Photoprotons, Pions-Plus, Radiation-Detectors, Research-Programs, Target-Chambers.

NT Workshop on Electron and Photon Interactions at Medium Energies, Bad Honnef, F.R. Germany, 29 Oct 1984.

IN Bonn Univ. (Germany, F.R.). Physikalisches Inst. 004261006 0848000.

VII. 8. Фотоядерные реакции

Photonuclear Reactions

12129 AU Yelon W.B., Schupp G.

TI Inelastic Scattering in Condensed Matter with High Intensity Mossbauer Radiation: Progress Report for Period March 1, 1986 - October 31, 1986.

YR 1986

MJ Electron-Detection, Photonuclear-Reactions, E-Transitions, Gadolinium-153, Gamma-Detection, Inelastic-Scattering, Lifetime, M1-Transitions, Silicon, Terbium-159, Tungsten-183, Ytterbium-170.

IN Missouri Univ.-Columbia. Research Reactor Facility. \*Department of Energy, Washington, DC. 049959060 9509370.

12130 AU Kissener H.R., Rotter I., Goncharova N.G.

TI Microscopic Studies of Electric Dipole Resonances in 1p Shell Nuclei.

YR 1986

MJ Photonuclear-Reactions, Shell-Models, Boron-10, Carbon-12, Center-of-Mass-System, Cross-Sections, Electric-Dipole-Moments, Excited-States, Fine-Structure, Giant-Resonance, Hamiltonians, Isospin, Lithium-6, Nitrogen-14, Oxygen-16, Particle-Core-Coupling-Model, Pauli-Principle.

IN Zentralinstitut fuer Kernforschung, Rossendorf Bei Dresden (German, D.R.) 018100000 7037000.

12131 AU Dietrich S.S., Berman B.L.

TI Atlas of Photoneutron Cross Sections Obtained with Monoenergetic Photons. Final Edition, 1986.

YR 1986

MJ Photoneutrons, Photonuclear-Reactions, Compiled-Data, Cross-Sections, Energy-Spectra, Integral-Cross-Sections, Knock-Out-Reactions, MeV-Range-01-10, MeV-Range-10-100, Nuclear-Data-Collections.

IN Lawrence Livermore National Lab., CA. \*Department of Energy, Washington, DC. 068147000 9513035.

12132 AU Onley D.S., Wright L.E.

TI Theory of Photon and Electron Induced Reactions. Progress Report, July 1, 1985-June 30, 1986.

YR 1986

MJ Electron-Reactions, Photonuclear-Reactions, Coulomb-Correction, Electrofission, Hypernuclei, Inelastic-Scattering, Mesons, Photons, Photoproduction, Research-Programs, Virtual-Particles.

IN Ohio Univ., Athens. Dept. of Physics and Astronomy. \*Department of Energy, Washington, DC. 013384026 9520530.

VII. 9. Электронные реакции

Electron Reactions

12133 AU Stroth U., Hasse R.W., Schuk P.

TI Nuclear Longitudinal Charge Response in the Quasi-Elastic Peak Region.  
 YR 1986  
 MJ Calcium-40-Target, Carbon-12-Target, Electron-Reactions, Iron-56-Target, Electrons, Energy-Dependence, Excited-States, MeV-Range-10-100, MeV-Range-100-1000, Particle-Hole-Model, Quasi-Elastic-Scattering, Random-Phase-Approximation, Response-Functions, Semiclassical-Approximation.  
 IN Gesellschaft Fuer Schwerionenforschung M.B.H., Darmstadt (Germany, F.R.) \*Institut Max Von Laue - Paul Langevin, 38 - Grenoble (France). 071703000 9200078.

VII. 10. Гигантские резонансы  
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Giant Resonances  
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- 12134 AU Storm D.W., Halpern I., Gossett C.A., Murakami T., Rosenzweig D.P.  
 TI (Gamma,n) Studies of the Giant Isovector E Resonance in Lead, Cadmium, and Calcium.  
 YR 1986  
 MJ Cadmium, Calcium-40-Target, Lead, Lead-208-Target, Asymmetry, E1-Transitions, E-Transitions, Experimental-Data, Giant-Resonance, Isovector, Neutrons, Photonuclear-Reactions.  
 NT American Physical Society Nuclear Physics Division Meeting, Vancouver, Canada, 9 Oct 1986.  
 IN Washington Univ., Seattle. Nuclear Physics Lab.\*Illinois Univ., Urbana. Dept. of Physics.\*Los Alamos National Lab., NM.\*Brookhaven National Lab., Upton, NY. \*Department of Energy, Washington, DC. 005042058 681700.
- 12135 AU Madsen V.A., Landau R.H.  
 TI Theoretical Studies of Multistep Processes, Isospin Effects in Nuclear Scattering, and Meson and Baryon Interactions in Nuclear Physics. Final Technical Report, 1 September 1979 - 30 April 1986.  
 YR 1986  
 MJ Antiproton-Reactions, Helium-3-Target, Kaon-Reactions, Pion-Reactions, Quadrupole-Moments, Scattering, Spin.  
 IN Oregon State Univ., Corvallis. Dept. of Physics.\*Department of Energy, Washington, DC. 013388010 4954000.
- 12136 AU Jakobsson B.  
 TI Intermediate Energy Heavy Ion Reactions. A Program for Celsius.  
 YR 1986  
 MJ Heavy-Ion-Reactions, Storage-Rings, Emission, Giant-Resonance, Pions, Planning, Resonance-Scattering.  
 NT Nuclear Physics Meeting of the Swedish Physical Society, Lund, Sweden, 14 Nov 1985.  
 IN Lund Univ. (Sweden). Fysiska Institutionen. 016503016 9860032.
- 12137 AU Fallieros S., Levin F.S.  
 TI Nuclear Excitations and Reaction Mechanisms. Progress Report.  
 YR 1986  
 MJ Nuclear-Reactions, Nuclei, Bag-Model, Compton-Effect, Dirac-Equation, Excited-States, Form-Factors, Gauge-Invariance Giant-Resonance, Isospin, Isovector, Nucleon-Deuteron-Interactions, Photonuclear-Reactions, Polarizability, Raman-Effect, Relativistic-Range, Research-Programs, Scattering, Skyrme-Potential, Time-Dependence.  
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