"gkdef.ps"

Masses of nuclei with $Z > N$ were calculated employing the following Garvey–Kelson mass relation

$$M(Z,N) = M(N,Z) + \sum_{i-1}^{Z-N} [M(N+i, N+i-1) - M(N+i-1, N+i)]. \tag{1}$$

There the first argument denotes the number of protons, and the second one — the number of neutrons, $M(Z,N)$ denotes the mass of nucleus with $Z > N$, $M(N,Z)$ is an experimental value of the mirror nucleus mass given in [1]. Differences of isobaric nuclei with $T = 1/2$ masses were calculated using the relation

$$M(N+i, N+i-1) - M(N+i-1, N+i) = \Delta E_c - 0.782 MeV, \tag{2}$$

where ΔE_c is the Coulomb displacement energy between a pair of isobaric analog nuclei. In calculations the semiphenomenological shell model expression of ΔE_c for diagonal nuclei which incorporates the effect of nuclear deformation is used

$$\Delta E_c = (A_1/A_i)^{\lambda/3}(C_1 + pC_2 + \alpha C_3)(1 - \beta_2^2/4\pi), \tag{3}$$

where $\alpha = 1/2 + (-)^{p+1}(\delta_{oddAi}/4T + \delta_{evenAi}(2T-1)/4T^2)$. $\delta_{oddAi} = 1$ if A_i is odd and it is equal to zero if A_i is even, $\delta_{evenAi} = 1$ if A_i is even and it equals zero if A_i is odd, p – the number of valence protons. It equals $Z_{i<} - Z_1$, where $Z_{i<}$ is the element symbol of the lesser Z of analog pair, A_1 and Z_1 are the magic mass and charge numbers.

Three alternative systems of β_2 values were used in calculations, and for each of them the values of parameter λ, C_1, C_2, C_3 were established relating eq. (3) and corresponding experimental ΔE_c values.

$M(Z,N)_1$ values in the table correspond to masses of nuclei with $Z > N$ which were calculated assuming that β_2 values were found using the expression for β_2 given by J.Jänecke in [2]. $M(Z,N)_2$ values correspond to β_2 values obtained in macroscopic–microscopic mass model published in [3]. $M(Z,N)_3$ values correspond yo masses calculated assuming that β_2=0.

In addition in the table values of $d_1 = M(Z,N)_1 - M(Z,N)_3$, $d_2 = M(Z,N)_2 - M(Z,N)_3$ and $d_3 = M(Z,N)_1 - M(Z,N)_2$ are presented. These quantities enable to make conclusion how essentially in different regions of nuclides taking into account the deformation and to reveal the regions where the application of alternative systems of β_2 values causes large variation of $M(Z,N)$ values.

[1] G.Audi et al. Nucl. Phys.**A624**(1997)1.

[2] J.Jänecke. Phys Lett.**103B**(1981)1.

[3] P.Möller et al. Atomic Data and Nuclear Data Tables,**59**(1995)183.

The Table . Mass values of nuclei with $Z > N$ calculated assuming different β_2 values and differences of these masses.

A	Z	N	$M(Z,N)_1$	$M(Z,N)_2$	$M(Z,N)_3$	d_1	d_2	d_3
1	2	3	4	5	6	7	8	9
17	9	8	2.013	2.019	1.996	.016	.022	-.006
18	10	8	5.411	5.410	5.383	.028	.028	.000
19	10	9	1.884	1.878	1.872	.012	.006	.006
19	11	8	13.074	13.066	13.043	.031	.023	.008
20	11	9	6.901	6.888	6.887	.014	.001	.013
21	11	10	-2.184	-2.191	-2.187	.003	-.005	.007
20	12	8	17.593	17.577	17.573	.020	.004	.016
21	12	9	10.926	10.905	10.923	.004	-.018	.022
22	12	10	-.421	-.437	-.413	-.008	-.024	.016
23	12	11	-5.474	-5.483	-5.463	-.011	-.019	.008
21	13	8	26.081	26.070	26.078	.004	-.008	.011
22	13	9	17.991	17.974	18.004	-.013	-.030	.017
23	13	10	6.673	6.662	6.698	-.025	-.036	.011
24	13	11	-.139	-.142	-.111	-.027	-.031	.004
25	13	12	-8.969	-8.964	-8.952	-.017	-.012	-.005
22	14	8	32.018	31.969	32.036	-.018	-.067	.049
23	14	9	23.242	23.187	23.276	-.035	-.089	.055
24	14	10	10.594	10.545	10.640	-.046	-.095	.049
25	14	11	3.636	3.595	3.685	-.049	-.090	.041
26	14	12	-7.276	-7.309	-7.238	-.038	-.071	.033
27	14	13	-12.482	-12.520	-12.461	-.022	-.059	.038
23	15	8	42.237	42.190	42.270	-.033	-.080	.047
24	15	9	32.343	32.290	32.393	-.050	-.103	.053
25	15	10	19.369	19.322	19.430	-.062	-.108	.047
26	15	11	10.977	10.938	11.042	-.064	-.104	.039
27	15	12	-.762	-.793	-.709	-.054	-.085	.031
28	15	13	-7.250	-7.286	-7.213	-.037	-.073	.036
29	15	14	-17.009	-17.007	-16.994	-.015	-.013	-.002
24	16	8	51.961	51.906	52.005	-.044	-.098	.055
25	16	9	41.431	41.371	41.491	-.060	-.121	.060
26	16	10	27.224	27.169	27.296	-.072	-.126	.054
27	16	11	17.665	17.618	17.740	-.075	-.122	.047
28	16	12	4.172	4.133	4.236	-.064	-.103	.039
29	16	13	-3.248	-3.292	-3.201	-.047	-.091	.043
30	16	14	-14.180	-14.186	-14.155	-.026	-.031	.006

The continuation.

1	2	3	4	5	6	7	8	9
31	16	15	-19.075	-19.082	-19.064	-.010	-.018	.008
26	17	9	53.989	53.910	54.048	-.060	-.138	.079
27	17	10	39.423	39.350	39.494	-.071	-.144	.072
28	17	11	27.748	27.683	27.822	-.074	-.139	.065
29	17	12	14.065	14.008	14.129	-.063	-.120	.057
30	17	13	4.630	4.569	4.677	-.047	-.108	.062
31	17	14	-7.161	-7.185	-7.136	-.025	-.049	.024
32	17	15	-13.403	-13.429	-13.394	-.010	-.036	.026
33	17	16	-21.051	-21.069	-21.051	.001	-.018	.018
27	18	9	66.749	66.642	66.803	-.054	-.162	.107
28	18	10	49.606	49.505	49.672	-.066	-.167	.101
29	18	11	37.399	37.305	37.468	-.069	-.163	.094
30	18	12	21.842	21.757	21.901	-.058	-.144	.085
31	18	13	11.547	11.457	11.588	-.042	-.132	.090
32	18	14	-2.294	-2.347	-2.274	-.020	-.072	.052
33	18	15	-9.437	-9.492	-9.433	-.005	-.059	.054
34	18	16	-18.398	-18.445	-18.404	.006	-.041	.047
35	18	17	-23.015	-23.044	-23.020	.005	-.024	.029
30	19	11	49.531	49.423	49.589	-.058	-.166	.108
31	19	12	33.666	33.566	33.713	-.048	-.147	.099
32	19	13	21.595	21.491	21.626	-.031	-.135	.104
33	19	14	7.450	7.384	7.460	-.009	-.076	.066
34	19	15	-1.501	-1.569	-1.507	.006	-.062	.068
35	19	16	-11.156	-11.217	-11.173	.016	-.044	.060
36	19	17	-17.368	-17.410	-17.383	.016	-.027	.042
37	19	18	-24.792	-24.806	-24.802	.011	-.003	.014
29	20	9	94.748	94.616	94.784	-.036	-.168	.131
30	20	10	73.317	73.192	73.365	-.048	-.173	.125
31	20	11	60.197	60.079	60.247	-.051	-.169	.118
32	20	12	42.682	42.572	42.722	-.040	-.150	.110
33	20	13	30.749	30.635	30.772	-.023	-.138	.114
34	20	14	14.583	14.506	14.585	-.002	-.078	.077
35	20	15	4.796	4.717	4.782	.014	-.065	.079
36	20	16	-6.377	-6.448	-6.401	.024	-.047	.071
37	20	17	-13.010	-13.063	-13.034	.023	-.030	.053
38	20	18	-21.962	-21.986	-21.980	.018	-.006	.024
39	20	19	-27.210	-27.221	-27.218	.008	-.003	.011
33	21	12	55.217	55.090	55.243	-.026	-.152	.126
34	21	13	42.927	42.796	42.936	-.009	-.140	.131
35	21	14	26.715	26.621	26.702	.012	-.081	.093

The continuation.

1	2	3	4	5	6	7	8	9
36	21	15	15.937	15.842	15.910	.028	-.067	.095
37	21	16	3.925	3.838	3.887	.038	-.049	.087
38	21	17	-4.512	-4.581	-4.549	.037	-.032	.069
39	21	18	-13.954	-13.995	-13.986	.032	-.008	.041
40	21	19	-20.403	-20.430	-20.425	.022	-.005	.027
41	21	20	-28.603	-28.619	-28.617	.014	-.002	.016
31	22	9	-	-	-	-.021	-.166	.145
32	22	10	101.721	101.582	101.754	-.033	-.172	.139
33	22	11	86.507	86.375	86.543	-.035	-.167	.132
34	22	12	65.393	65.269	65.418	-.025	-.148	.124
35	22	13	52.660	52.532	52.668	-.008	-.136	.128
36	22	14	35.603	35.512	35.590	.014	-.077	.091
37	22	15	24.123	24.030	24.094	.029	-.064	.093
38	22	16	10.890	10.805	10.851	.039	-.046	.085
39	22	17	2.415	2.348	2.376	.039	-.028	.067
40	22	18	-8.823	-8.861	-8.856	.034	-.005	.038
41	22	19	-15.498	-15.522	-15.521	.023	-.002	.025
42	22	20	-25.082	-25.096	-25.098	.015	.001	.014
43	22	21	-29.258	-29.256	-29.259	.001	.004	-.002
37	23	14	48.582	48.508	48.588	-.006	-.080	.074
38	23	15	35.754	35.678	35.744	.010	-.067	.076
39	23	16	21.692	21.624	21.672	.020	-.049	.069
40	23	17	11.760	11.710	11.741	.019	-.031	.051
41	23	18	.253	.231	.238	.014	-.008	.022
42	23	19	-7.858	-7.866	-7.861	.004	-.004	.008
43	23	20	-17.841	-17.839	-17.838	-.004	-.002	-.002
44	23	21	-23.784	-23.765	-23.766	-.018	.001	-.019
45	23	22	-31.904	-31.888	-31.885	-.019	-.003	-.016
35	24	11	116.751	116.651	116.829	-.078	-.178	.100
36	24	12	92.455	92.363	92.522	-.067	-.159	.092
37	24	13	76.923	76.826	76.973	-.051	-.147	.096
38	24	14	58.860	58.801	58.889	-.029	-.088	.059
39	24	15	45.069	45.008	45.082	-.014	-.074	.061
40	24	16	29.502	29.449	29.506	-.004	-.056	.053
41	24	17	19.477	19.442	19.481	-.004	-.039	.035
42	24	18	6.396	6.390	6.405	-.009	-.015	.006
43	24	19	-1.931	-1.924	-1.911	-.020	-.012	-.008
44	24	20	-13.404	-13.386	-13.377	-.027	-.009	-.018
45	24	21	-19.539	-19.504	-19.498	-.041	-.007	-.035
46	24	22	-29.525	-29.493	-29.482	-.043	-.011	-.032
47	24	23	-34.506	-34.490	-34.482	-.024	-.008	-.016

The continuation.

1	2	3	4	5	6	7	8	9
41	25	16	41.444	41.383	41.465	-.021	-.082	.061
42	25	17	29.523	29.480	29.545	-.022	-.065	.043
43	25	18	16.534	16.520	16.561	-.027	-.041	.014
44	25	19	6.545	6.545	6.583	-.038	-.038	.001
45	25	20	-5.054	-5.044	-5.008	-.045	-.035	-.010
46	25	21	-12.535	-12.508	-12.475	-.059	-.033	-.026
47	25	22	-22.637	-22.613	-22.577	-.061	-.037	-.024
48	25	23	-29.283	-29.275	-29.241	-.041	-.034	-.008
49	25	24	-37.632	-37.640	-37.614	-.018	-.026	.008
37	26	11	-	-	-	-.096	-.220	.124
38	26	12	-	-	-	-.086	-.201	.115
39	26	13	103.517	103.397	103.586	-.069	-.189	.120
40	26	14	83.805	83.723	83.853	-.048	-.130	.082
41	26	15	68.672	68.588	68.705	-.032	-.116	.084
42	26	16	50.908	50.831	50.930	-.022	-.098	.076
43	26	17	38.585	38.526	38.607	-.022	-.081	.058
44	26	18	24.354	24.324	24.381	-.028	-.057	.030
45	26	19	13.852	13.836	13.890	-.038	-.054	.016
46	26	20	.728	.722	.774	-.046	-.051	.006
47	26	21	-7.004	-6.993	-6.944	-.060	-.049	-.011
48	26	22	-18.089	-18.080	-18.027	-.061	-.053	-.008
49	26	23	-24.660	-24.668	-24.618	-.042	-.050	.008
50	26	24	-34.457	-34.480	-34.438	-.018	-.042	.024
51	26	25	-40.133	-40.148	-40.132	.000	-.016	.016
43	27	16	63.969	63.885	63.981	-.012	-.096	.084
44	27	17	50.924	50.858	50.937	-.012	-.079	.066
45	27	18	35.198	35.160	35.215	-.017	-.055	.038
46	27	19	23.342	23.318	23.370	-.028	-.052	.024
47	27	20	9.825	9.811	9.860	-.035	-.049	.014
48	27	21	1.137	1.140	1.186	-.050	-.047	-.003
49	27	22	-9.858	-9.858	-9.807	-.051	-.050	.000
50	27	23	-17.620	-17.636	-17.589	-.032	-.047	.016
51	27	24	-27.345	-27.377	-27.337	-.008	-.040	.032
52	27	25	-34.295	-34.319	-34.305	.010	-.014	.024
53	27	26	-42.640	-42.648	-42.650	.010	.002	.008
41	28	13	-	-	-	-.039	-.173	.134
42	28	14	110.398	110.302	110.416	-.018	-.114	.096
43	28	15	93.598	93.500	93.601	-.003	-.101	.098
44	28	16	74.269	74.178	74.261	.008	-.083	.090
45	28	17	60.704	60.631	60.697	.007	-.065	.072
46	28	18	43.894	43.850	43.892	.002	-.042	.044

The continuation.

1	2	3	4	5	6	7	8	9
47	28	19	31.762	31.732	31.770	-.008	-.038	.030
48	28	20	16.647	16.628	16.663	-.016	-.036	.019
49	28	21	7.775	7.772	7.805	-.030	-.033	.003
50	28	22	-4.028	-4.034	-3.997	-.031	-.037	.005
51	28	23	-11.903	-11.924	-11.890	-.012	-.034	.022
52	28	24	-22.616	-22.654	-22.627	.011	-.026	.038
53	28	25	-29.580	-29.610	-29.610	.029	.000	.029
54	28	26	-39.249	-39.263	-39.279	.030	.016	.014
55	28	27	-45.326	-45.332	-45.346	.019	.013	.006
48	29	19	44.097	44.070	44.099	-.003	-.029	.026
49	29	20	28.334	28.319	28.345	-.010	-.026	.016
50	29	21	18.552	18.553	18.576	-.024	-.024	-.001
51	29	22	6.433	6.431	6.459	-.026	-.028	.002
52	29	23	-2.380	-2.398	-2.374	-.007	-.025	.018
53	29	24	-13.721	-13.755	-13.738	.017	-.017	.034
54	29	25	-21.686	-21.711	-21.721	.035	.009	.026
55	29	26	-31.713	-31.724	-31.749	.035	.025	.010
56	29	27	-38.575	-38.577	-38.600	.025	.023	.002
57	29	28	-47.313	-47.309	-47.319	.006	.009	-.004
49	30	19	55.039	55.017	55.034	.005	-.017	.022
50	30	20	39.191	39.179	39.193	-.003	-.014	.011
51	30	21	29.008	29.014	29.025	-.017	-.012	-.005
52	30	22	15.834	15.836	15.852	-.018	-.015	-.003
53	30	23	6.350	6.337	6.349	.001	-.012	.014
54	30	24	-6.231	-6.261	-6.256	.025	-.005	.029
55	30	25	-14.703	-14.724	-14.746	.043	.021	.021
56	30	26	-25.702	-25.707	-25.745	.043	.037	.006
57	30	27	-32.742	-32.740	-32.775	.033	.035	-.002
58	30	28	-42.323	-42.315	-42.336	.013	.022	-.008
59	30	29	-47.214	-47.209	-47.222	.008	.012	-.005
54	31	23	17.548	17.513	17.551	-.002	-.037	.035
55	31	24	4.834	4.783	4.812	.021	-.030	.051
56	31	25	-4.662	-4.705	-4.701	.039	-.004	.043
57	31	26	-16.036	-16.064	-16.076	.040	.012	.027
58	31	27	-24.004	-24.023	-24.033	.029	.010	.019
59	31	28	-34.011	-34.024	-34.021	.010	-.003	.013
60	31	29	-39.963	-39.980	-39.968	.004	-.013	.017
61	31	30	-47.102	-47.124	-47.099	-.003	-.025	.022
51	32	19	82.198	82.147	82.203	-.005	-.057	.052
52	32	20	65.094	65.053	65.107	-.013	-.054	.041

The continuation.

1	2	3	4	5	6	7	8	9
53	32	21	53.101	53.076	53.127	-.027	-.052	.025
54	32	22	38.375	38.348	38.403	-.028	-.055	.027
55	32	23	27.889	27.846	27.898	-.009	-.052	.044
56	32	24	14.250	14.190	14.235	.015	-.045	.059
57	32	25	4.360	4.309	4.327	.033	-.019	.051
58	32	26	-8.408	-8.444	-8.441	.033	-.003	.036
59	32	27	-16.784	-16.812	-16.807	.023	-.005	.028
60	32	28	-27.726	-27.748	-27.730	.003	-.018	.022
61	32	29	-34.000	-34.026	-33.998	-.002	-.028	.026
62	32	30	-42.326	-42.356	-42.316	-.010	-.040	.030
63	32	31	-47.088	-47.096	-47.081	-.007	-.015	.009
59	33	26	2.780	2.731	2.768	.012	-.037	.049
60	33	27	-6.507	-6.548	-6.509	.002	-.039	.041
61	33	28	-17.777	-17.813	-17.760	-.017	-.053	.035
62	33	29	-25.117	-25.156	-25.094	-.023	-.062	.039
63	33	30	-33.670	-33.713	-33.639	-.031	-.074	.044
64	33	31	-39.535	-39.557	-39.508	-.027	-.049	.022
65	33	32	-46.713	-46.726	-46.692	-.021	-.034	.014
55	34	21	80.478	80.439	80.551	-.073	-.112	.039
56	34	22	64.755	64.714	64.829	-.074	-.116	.041
57	34	23	52.408	52.351	52.463	-.055	-.113	.057
58	34	24	37.355	37.282	37.387	-.032	-.105	.073
59	34	25	26.119	26.054	26.133	-.014	-.079	.065
60	34	26	12.082	12.032	12.095	-.013	-.063	.049
61	34	27	2.292	2.250	2.316	-.024	-.065	.042
62	34	28	-10.253	-10.289	-10.210	-.043	-.079	.036
63	34	29	-17.849	-17.888	-17.800	-.049	-.088	.039
64	34	30	-27.410	-27.454	-27.354	-.056	-.100	.044
65	34	31	-33.304	-33.326	-33.251	-.053	-.075	.022
66	34	32	-41.874	-41.887	-41.827	-.046	-.060	.014
67	34	33	-46.594	-46.594	-46.568	-.026	-.026	.000
62	35	27	13.903	13.824	13.966	-.063	-.142	.080
63	35	28	1.125	1.051	1.207	-.082	-.156	.074
64	35	29	-7.549	-7.627	-7.461	-.088	-.165	.077
65	35	30	-17.174	-17.256	-17.078	-.095	-.177	.082
66	35	31	-24.227	-24.288	-24.135	-.092	-.152	.060
67	35	32	-32.761	-32.813	-32.676	-.085	-.137	.052
68	35	33	-38.683	-38.721	-38.618	-.065	-.103	.038
69	35	34	-46.153	-46.191	-46.114	-.039	-.077	.038
59	36	23	79.509	79.374	79.644	-.136	-.270	.135
60	36	24	63.096	62.946	63.208	-.112	-.263	.151

The continuation.

1	2	3	4	5	6	7	8	9
61	36	25	50.494	50.351	50.588	-.094	-.237	.142
62	36	26	35.227	35.100	35.321	-.094	-.221	.127
63	36	27	23.986	23.867	24.090	-.104	-.223	.119
64	36	28	10.030	9.917	10.153	-.123	-.236	.113
65	36	29	1.103	.987	1.233	-.129	-.246	.117
66	36	30	-9.671	-9.792	-9.534	-.137	-.258	.121
67	36	31	-16.891	-16.991	-16.758	-.133	-.233	.100
68	36	32	-26.593	-26.684	-26.466	-.127	-.218	.091
69	36	33	-32.395	-32.472	-32.289	-.106	-.184	.078
70	36	34	-41.304	-41.381	-41.223	-.080	-.158	.077
71	36	35	-46.100	-46.140	-46.059	-.041	-.081	.039
64	37	27	36.623	36.431	36.777	-.154	-.345	.191
65	37	28	22.592	22.406	22.765	-.173	-.359	.186
66	37	29	12.698	12.509	12.877	-.179	-.368	.189
67	37	30	1.937	1.744	2.124	-.187	-.380	.194
68	37	31	-6.509	-6.681	-6.325	-.183	-.355	.172
69	37	32	-16.121	-16.284	-15.944	-.177	-.340	.164
70	37	33	-23.065	-23.216	-22.909	-.156	-.306	.150
71	37	34	-31.867	-32.017	-31.737	-.130	-.280	.150
72	37	35	-38.072	-38.184	-37.981	-.091	-.203	.112
73	37	36	-46.296	-46.369	-46.246	-.050	-.122	.073
63	38	25	77.001	76.713	77.192	-.191	-.479	.288
64	38	26	60.569	60.297	60.760	-.191	-.463	.272
65	38	27	48.183	47.918	48.383	-.201	-.465	.264
66	38	28	32.621	32.362	32.841	-.220	-.479	.259
67	38	29	22.587	22.324	22.813	-.226	-.488	.262
68	38	30	10.745	10.478	10.979	-.234	-.500	.267
69	38	31	2.188	1.943	2.418	-.230	-.475	.245
70	38	32	-8.653	-8.889	-8.429	-.224	-.460	.237
71	38	33	-15.683	-15.906	-15.480	-.203	-.426	.223
72	38	34	-25.735	-25.958	-25.557	-.177	-.400	.223
73	38	35	-31.517	-31.702	-31.379	-.138	-.323	.185
74	38	36	-40.646	-40.792	-40.549	-.097	-.242	.146
75	38	37	-46.288	-46.361	-46.241	-.047	-.120	.073
67	39	28	45.943	45.575	46.212	-.270	-.637	.367
68	39	29	35.381	35.010	35.656	-.275	-.646	.371
69	39	30	23.370	22.995	23.653	-.283	-.658	.375
70	39	31	13.640	13.286	13.920	-.280	-.633	.354
71	39	32	3.039	2.693	3.311	-.273	-.618	.345
72	39	33	-4.984	-5.316	-4.732	-.252	-.584	.332
73	39	34	-15.021	-15.352	-14.794	-.226	-.558	.332

The continuation.

1	2	3	4	5	6	7	8	9
74	39	35	-22.255	-22.548	-22.067	-.188	-.481	.293
75	39	36	-31.682	-31.936	-31.536	-.146	-.400	.254
76	39	37	-38.510	-38.692	-38.414	-.096	-.278	.182
77	39	38	-46.939	-47.048	-46.890	-.049	-.158	.109
67	40	27	74.442	73.960	74.733	-.291	-.773	.482
68	40	28	57.580	57.104	57.890	-.310	-.787	.477
69	40	29	46.564	46.084	46.880	-.316	-.796	.480
70	40	30	33.607	33.122	33.930	-.324	-.808	.485
71	40	31	23.789	23.326	24.109	-.320	-.783	.463
72	40	32	11.739	11.284	12.053	-.314	-.768	.455
73	40	33	3.670	3.229	3.963	-.293	-.734	.441
74	40	34	-7.636	-8.077	-7.369	-.267	-.708	.441
75	40	35	-14.707	-15.110	-14.479	-.228	-.631	.403
76	40	36	-25.038	-25.402	-24.851	-.187	-.550	.363
77	40	37	-31.474	-31.765	-31.337	-.137	-.428	.291
78	40	38	-40.758	-40.976	-40.668	-.090	-.308	.218
79	40	39	-46.976	-47.086	-46.936	-.041	-.150	.109
71	41	30	47.329	46.691	47.691	-.362	-1.001	.639
72	41	31	36.824	36.207	37.183	-.359	-.976	.617
73	41	32	24.512	23.904	24.864	-.352	-.961	.608
74	41	33	15.252	14.657	15.583	-.332	-.926	.595
75	41	34	3.893	3.298	4.198	-.306	-.901	.595
76	41	35	-4.372	-4.928	-4.105	-.267	-.823	.556
77	41	36	-14.746	-15.264	-14.521	-.225	-.743	.517
78	41	37	-22.100	-22.544	-21.924	-.176	-.620	.445
79	41	38	-31.576	-31.948	-31.447	-.129	-.500	.372
80	41	39	-38.299	-38.562	-38.220	-.079	-.342	.263
81	41	40	-47.371	-47.525	-47.333	-.039	-.192	.154
70	42	28	84.893	84.267	85.269	-.376	-1.002	.626
71	42	29	72.852	72.222	73.233	-.381	-1.011	.630
72	42	30	58.350	57.715	58.739	-.389	-1.023	.635
73	42	31	47.534	46.921	47.920	-.386	-.998	.613
74	42	32	34.215	33.610	34.594	-.379	-.983	.604
75	42	33	24.906	24.315	25.264	-.358	-.949	.591
76	42	34	12.637	12.047	12.970	-.333	-.923	.591
77	42	35	4.510	3.958	4.804	-.294	-.846	.553
78	42	36	-6.907	-7.420	-6.655	-.252	-.765	.513
79	42	37	-14.133	-14.574	-13.931	-.202	-.643	.441
80	42	38	-24.576	-24.944	-24.421	-.155	-.523	.368
81	42	39	-31.323	-31.582	-31.217	-.106	-.365	.259

The continuation.

1	2	3	4	5	6	7	8	9
82	42	40	-40.881	-41.030	-40.815	-.065	-.215	.150
83	42	41	-47.133	-47.129	-47.106	-.027	-.023	-.004
75	43	32	47.712	47.137	48.114	-.402	-.977	.575
76	43	33	37.580	37.019	37.961	-.381	-.942	.561
77	43	34	25.221	24.660	25.576	-.355	-.916	.561
78	43	35	16.223	15.700	16.540	-.316	-.839	.523
79	43	36	4.742	4.258	5.016	-.275	-.759	.484
80	43	37	-3.578	-3.989	-3.353	-.225	-.636	.411
81	43	38	-13.866	-14.205	-13.688	-.178	-.516	.338
82	43	39	-21.568	-21.798	-21.440	-.129	-.358	.230
83	43	40	-31.217	-31.337	-31.129	-.088	-.208	.120
84	43	41	-38.120	-38.087	-38.071	-.049	-.016	-.034
85	43	42	-47.135	-47.105	-47.112	-.023	.007	-.030
74	44	30	84.969	84.394	85.391	-.422	-.997	.575
75	44	31	72.974	72.421	73.393	-.419	-.972	.553
76	44	32	58.624	58.079	59.036	-.412	-.957	.545
77	44	33	48.222	47.691	48.614	-.391	-.922	.531
78	44	34	35.063	34.532	35.429	-.366	-.897	.531
79	44	35	25.876	25.384	26.203	-.327	-.819	.493
80	44	36	13.559	13.106	13.845	-.285	-.739	.453
81	44	37	5.407	5.026	5.643	-.235	-.616	.381
82	44	38	-6.080	-6.388	-5.891	-.189	-.496	.308
83	44	39	-13.435	-13.634	-13.296	-.139	-.338	.199
84	44	40	-23.980	-24.070	-23.881	-.098	-.188	.090
85	44	41	-31.127	-31.063	-31.067	-.060	.004	-.064
86	44	42	-40.357	-40.297	-40.324	-.033	.027	-.060
87	44	43	-46.853	-46.823	-46.843	-.010	.020	-.030
79	45	34	48.542	48.025	48.915	-.373	-.890	.517
80	45	35	38.425	37.947	38.759	-.334	-.813	.478
81	45	36	26.129	25.689	26.422	-.293	-.732	.439
82	45	37	17.044	16.678	17.287	-.243	-.610	.367
83	45	38	5.502	5.208	5.698	-.196	-.490	.294
84	45	39	-2.895	-3.080	-2.749	-.147	-.332	.185
85	45	40	-13.273	-13.348	-13.167	-.106	-.182	.076
86	45	41	-21.430	-21.352	-21.362	-.067	.011	-.078
87	45	42	-31.125	-31.051	-31.084	-.041	.033	-.074
88	45	43	-37.929	-37.885	-37.911	-.018	.027	-.045
89	45	44	-47.143	-47.129	-47.136	-.008	.007	-.014
77	46	31	100.634	100.112	101.058	-.423	-.945	.522
78	46	32	85.045	84.531	85.462	-.417	-.930	.514

The continuation.

1	2	3	4	5	6	7	8	9
79	46	33	73.573	73.073	73.969	-.396	-.896	.500
80	46	34	59.400	58.900	59.770	-.370	-.870	.500
81	46	35	49.040	48.578	49.371	-.331	-.793	.462
82	46	36	35.935	35.512	36.224	-.290	-.712	.423
83	46	37	26.861	26.511	27.101	-.240	-.590	.350
84	46	38	14.355	14.078	14.548	-.193	-.470	.277
85	46	39	6.116	5.947	6.260	-.144	-.312	.169
86	46	40	-5.222	-5.282	-5.120	-.103	-.162	.059
87	46	41	-13.085	-12.990	-13.021	-.064	.030	-.095
88	46	42	-23.430	-23.339	-23.393	-.038	.053	-.091
89	46	43	-30.154	-30.093	-30.139	-.015	.046	-.061
90	46	44	-40.338	-40.308	-40.334	-.004	.026	-.031
91	46	45	-46.402	-46.386	-46.405	.003	.020	-.016
84	47	37	38.982	38.635	39.218	-.236	-.583	.347
85	47	38	26.695	26.420	26.884	-.189	-.463	.274
86	47	39	17.480	17.314	17.620	-.140	-.305	.166
87	47	40	6.033	5.976	6.132	-.099	-.155	.056
88	47	41	-2.528	-2.431	-2.468	-.061	.037	-.097
89	47	42	-12.935	-12.842	-12.901	-.034	.060	-.094
90	47	43	-21.070	-21.006	-21.059	-.011	.053	-.064
91	47	44	-30.711	-30.677	-30.710	-.001	.033	-.034
92	47	45	-37.862	-37.842	-37.868	.007	.026	-.019
93	47	46	-46.901	-46.898	-46.905	.004	.007	-.003
81	48	33	100.595	100.106	100.976	-.380	-.870	.490
82	48	34	85.485	84.995	85.840	-.354	-.844	.490
83	48	35	73.925	73.473	74.240	-.316	-.767	.451
84	48	36	60.011	59.599	60.285	-.274	-.686	.412
85	48	37	49.686	49.346	49.910	-.224	-.564	.340
86	48	38	36.397	36.130	36.574	-.177	-.444	.267
87	48	39	26.866	26.708	26.994	-.128	-.286	.158
88	48	40	14.878	14.829	14.965	-.087	-.136	.049
89	48	41	6.439	6.544	6.487	-.049	.056	-.105
90	48	42	-4.978	-4.877	-4.956	-.022	.079	-.101
91	48	43	-12.725	-12.654	-12.726	.001	.072	-.071
92	48	44	-23.418	-23.377	-23.430	.011	.052	-.041
93	48	45	-30.553	-30.526	-30.572	.019	.046	-.027
94	48	46	-40.431	-40.420	-40.446	.016	.026	-.010
95	48	47	-46.979	-46.971	-46.990	.012	.019	-.008
87	49	38	49.255	48.985	49.422	-.167	-.437	.270
88	49	39	38.800	38.639	38.918	-.118	-.279	.161

The continuation.

1	2	3	4	5	6	7	8	9
89	49	40	26.847	26.795	26.924	-.077	-.129	.052
90	49	41	17.575	17.676	17.613	-.039	.063	-.102
91	49	42	6.200	6.298	6.212	-.012	.086	-.098
92	49	43	-2.462	-2.394	-2.473	.011	.079	-.068
93	49	44	-13.062	-13.024	-13.083	.021	.059	-.038
94	49	45	-21.104	-21.080	-21.132	.029	.052	-.024
95	49	46	-31.017	-31.010	-31.043	.026	.033	-.007
96	49	47	-38.235	-38.231	-38.257	.022	.026	-.004
97	49	48	-47.389	-47.392	-47.399	.010	.007	.003
85	50	35	101.069	100.619	101.359	-.290	-.739	.450
86	50	36	85.922	85.512	86.170	-.249	-.659	.410
87	50	37	74.004	73.666	74.202	-.199	-.536	.338
88	50	38	59.745	59.480	59.896	-.152	-.416	.265
89	50	39	48.926	48.770	49.029	-.102	-.259	.156
90	50	40	36.480	36.433	36.541	-.062	-.108	.047
91	50	41	27.125	27.232	27.148	-.023	.084	-.107
92	50	42	15.130	15.233	15.126	.004	.107	-.103
93	50	43	6.401	6.475	6.375	.026	.100	-.073
94	50	44	-4.833	-4.790	-4.870	.037	.080	-.043
95	50	45	-12.975	-12.946	-13.019	.044	.073	-.029
96	50	46	-23.511	-23.499	-23.552	.041	.054	-.012
97	50	47	-30.927	-30.918	-30.964	.037	.047	-.009
98	50	48	-40.714	-40.712	-40.740	.026	.028	-.002
99	50	49	-47.379	-47.374	-47.395	.016	.021	-.005
94	51	43	19.488	19.563	19.460	.027	.103	-.075
95	51	44	7.923	7.968	7.885	.038	.083	-.045
96	51	45	-.622	-.591	-.668	.045	.076	-.031
97	51	46	-11.497	-11.482	-11.539	.042	.057	-.014
98	51	47	-19.375	-19.364	-19.414	.038	.050	-.011
99	51	48	-29.469	-29.466	-29.496	.027	.030	-.004
100	51	49	-36.965	-36.958	-36.982	.017	.024	-.007
101	51	50	-45.922	-45.920	-45.923	.001	.003	-.002
95	52	43	31.459	31.537	31.433	.026	.103	-.078
96	52	44	19.136	19.183	19.099	.036	.084	-.047
97	52	45	10.249	10.282	10.205	.044	.077	-.033
98	52	46	-1.163	-1.146	-1.203	.041	.057	-.016
99	52	47	-9.418	-9.405	-9.455	.037	.051	-.014
100	52	48	-20.087	-20.081	-20.112	.025	.031	-.006
101	52	49	-27.405	-27.396	-27.420	.015	.025	-.009
102	52	50	-37.275	-37.271	-37.275	.000	.004	-.004

The continuation.

1	2	3	4	5	6	7	8	9
103	52	51	-41.943	-41.941	-41.942	-.001	.001	-.002
98	53	45	23.699	23.739	23.661	.037	.078	-.041
99	53	46	11.977	12.001	11.943	.034	.058	-.024
100	53	47	3.186	3.208	3.156	.030	.052	-.021
101	53	48	-7.502	-7.488	-7.520	.018	.032	-.014
102	53	49	-15.103	-15.086	-15.112	.009	.026	-.017
103	53	50	-25.446	-25.434	-25.439	-.007	.005	-.012
104	53	51	-31.486	-31.476	-31.478	-.008	.002	-.010
105	53	52	-	-	-	-.007	.001	-.008
99	54	45	35.508	35.544	35.485	.023	.058	-.036
100	54	46	23.154	23.173	23.135	.019	.039	-.019
101	54	47	14.359	14.376	14.344	.016	.032	-.016
102	54	48	3.078	3.087	3.074	.004	.013	-.009
103	54	49	-5.352	-5.340	-5.346	-.006	.006	-.012
104	54	50	-15.836	-15.829	-15.814	-.022	-.015	-.007
105	54	51	-21.702	-21.697	-21.679	-.023	-.018	-.005
106	54	52	-29.786	-29.783	-29.765	-.021	-.018	-.003
107	54	53	-	-	-	-.015	-.019	.005
103	55	48	16.214	16.222	16.236	-.021	-.013	-.008
104	55	49	7.582	7.594	7.614	-.031	-.020	-.011
105	55	50	-3.106	-3.100	-3.059	-.047	-.041	-.006
106	55	51	-9.877	-9.873	-9.829	-.048	-.044	-.004
107	55	52	-17.867	-17.865	-17.821	-.047	-.045	-.002
108	55	53	-24.206	-24.212	-24.166	-.040	-.046	.006
109	55	54	-	-	-	-.025	-.026	.001
103	56	47	39.777	39.792	39.825	-.048	-.033	-.015
104	56	48	27.471	27.479	27.531	-.060	-.053	-.007
105	56	49	18.752	18.762	18.821	-.070	-.059	-.011
106	56	50	7.276	7.282	7.362	-.085	-.080	-.005
107	56	51	.410	.413	.496	-.086	-.083	-.003
108	56	52	-8.454	-8.452	-8.369	-.085	-.084	-.001
109	56	53	-14.373	-14.379	-14.294	-.078	-.085	.006
110	56	54	-22.736	-22.737	-22.672	-.064	-.065	.002
111	56	55	-	-	-	-.038	-.039	.001
108	57	51	13.319	13.319	13.459	-.140	-.140	.000
109	57	52	4.418	4.415	4.556	-.138	-.141	.003
110	57	53	-2.384	-2.394	-2.252	-.131	-.142	.010
111	57	54	-10.621	-10.627	-10.505	-.117	-.122	.005
112	57	55	-16.920	-16.925	-16.829	-.091	-.096	.005
113	57	56	-	-	-	-.053	-.057	.004
107	58	49	44.373	44.362	44.565	-.192	-.203	.011

The continuation.

1	2	3	4	5	6	7	8	9
108	58	50	32.400	32.384	32.608	-.207	-.224	.016
109	58	51	24.510	24.492	24.719	-.208	-.227	.018
110	58	52	14.654	14.634	14.861	-.207	-.227	.020
111	58	53	7.957	7.929	8.157	-.200	-.228	.028
112	58	54	-1.240	-1.263	-1.054	-.186	-.209	.023
113	58	55	-7.379	-7.401	-7.219	-.160	-.183	.022
114	58	56	-15.996	-16.017	-15.874	-.122	-.144	.022
115	58	57	-	-	-	-.069	-.087	.018
113	59	54	11.750	11.704	12.020	-.270	-.316	.046
114	59	55	4.836	4.791	5.080	-.245	-.290	.045
115	59	56	-3.890	-3.934	-3.683	-.206	-.251	.044
116	59	57	-	-	-	-.153	-.194	.041
117	59	58	-	-	-	-.084	-.107	.023
112	60	52	40.084	40.024	40.473	-.390	-.449	.060
113	60	53	32.188	32.120	32.571	-.383	-.451	.067
114	60	54	22.164	22.102	22.533	-.368	-.431	.063
115	60	55	15.023	14.961	15.366	-.343	-.405	.062
116	60	56	5.786	5.725	6.091	-.305	-.366	.061
117	60	57	-1.216	-1.274	-.965	-.252	-.309	.057
118	60	58	-	-	-	-.183	-.222	.039
119	60	59	-	-	-	-.099	-.115	.017
117	61	56	18.629	18.547	19.045	-.416	-.499	.083
118	61	57	11.049	10.970	11.412	-.363	-.442	.079
119	61	58	1.875	1.814	2.169	-.294	-.355	.061
120	61	59	-	-	-	-.210	-.248	.038
121	61	60	-	-	-	-.111	-.133	.022
115	62	53	57.974	57.871	58.589	-.615	-.718	.103
116	62	54	47.316	47.217	47.916	-.600	-.698	.098
117	62	55	39.343	39.246	39.918	-.575	-.672	.097
118	62	56	29.231	29.135	29.768	-.536	-.633	.097
119	62	57	21.502	21.409	21.985	-.483	-.576	.093
120	62	58	11.824	11.749	12.239	-.414	-.489	.075
121	62	59	4.834	4.782	5.164	-.330	-.382	.052
122	62	60	-	-	-	-.231	-.267	.036
123	62	61	-	-	-	-.120	-.134	.014
121	63	58	24.890	24.797	25.431	-.541	-.635	.094
122	63	59	17.207	17.136	17.664	-.457	-.528	.071
123	63	60	-	-	-	-.358	-.412	.054
124	63	61	-	-	-	-.247	-.280	.032
125	63	62	-	-	-	-.127	-.145	.019
120	64	56	54.193	54.067	54.985	-.792	-.918	.126

The continuation.

1	2	3	4	5	6	7	8	9
121	64	57	45.917	45.795	46.656	-.739	-.861	.122
122	64	58	35.635	35.531	36.305	-.670	-.774	.104
123	64	59	27.924	27.843	28.510	-.586	-.667	.081
124	64	60	-	-	-	-.487	-.552	.065
125	64	61	-	-	-	-.376	-.419	.043
126	64	62	-	-	-	-.256	-.285	.029
127	64	63	-	-	-	-.129	-.140	.010
126	65	61	-	-	-	-.504	-.561	.057
127	65	62	-	-	-	-.384	-.427	.043
128	65	63	-	-	-	-.257	-.281	.024
129	65	64	-	-	-	-.128	-.142	.014
125	66	59	52.951	52.835	53.788	-.837	-.953	.116
126	66	60	42.539	42.440	43.278	-.738	-.838	.100
127	66	61	-	-	-	-.627	-.705	.078
128	66	62	-	-	-	-.507	-.571	.064
129	66	63	-	-	-	-.380	-.426	.045
130	66	64	-	-	-	-.251	-.286	.035
131	66	65	-	-	-	-.123	-.144	.021
133	67	66	-	-	-	-.116	-.138	.023
130	68	62	49.967	49.846	50.695	-.728	-.849	.121
131	68	63	-	-	-	-.602	-.703	.102
132	68	64	-	-	-	-.472	-.564	.091
133	68	65	-	-	-	-.344	-.422	.077
134	68	66	-	-	-	-.221	-.278	.057
135	68	67	-	-	-	-.105	-.140	.034
130	69	61	74.975	74.793	75.917	-.942	-1.124	.182
131	69	62	64.392	64.224	65.213	-.822	-.989	.168
132	69	63	56.263	56.114	56.958	-.695	-.844	.149
133	69	64	-	-	-	-.566	-.705	.139
134	69	65	-	-	-	-.438	-.563	.125
135	69	66	-	-	-	-.315	-.419	.104
136	69	67	-	-	-	-.199	-.280	.081
137	69	68	-	-	-	-.094	-.141	.047
135	70	65	-	-	-	-.518	-.705	.186
136	70	66	-	-	-	-.395	-.561	.166
137	70	67	-	-	-	-.279	-.422	.143
138	70	68	-	-	-	-.174	-.283	.109
139	70	69	-	-	-	-.080	-.142	.062