Estimation of digitized data error.

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In some cases the error of digitized data could be estimated more reliably than it's done by digitizing codes.

This could be done in case, if on figure the data of other author(s) which are known (as example, given in EXFOR) are presented.

Such estimation was done for digitized data of Entry 41369, Subent 010, in preliminary trans 4159.

On Fig.7 of S,ISINN-5,348,1997 article this data (measured by V.Gerasimov, Kurchatov's Inst. marked as "present") are compared with the known data of K.Kobayashi (KULS spectrometer, Japan) given in Entry 22479 Subent 002.

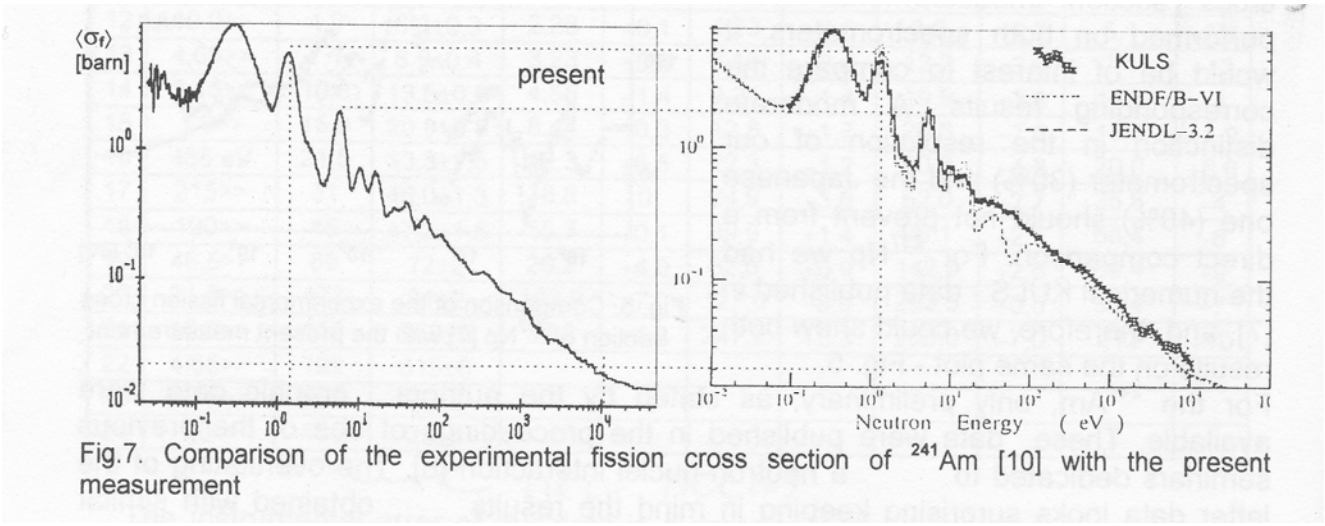
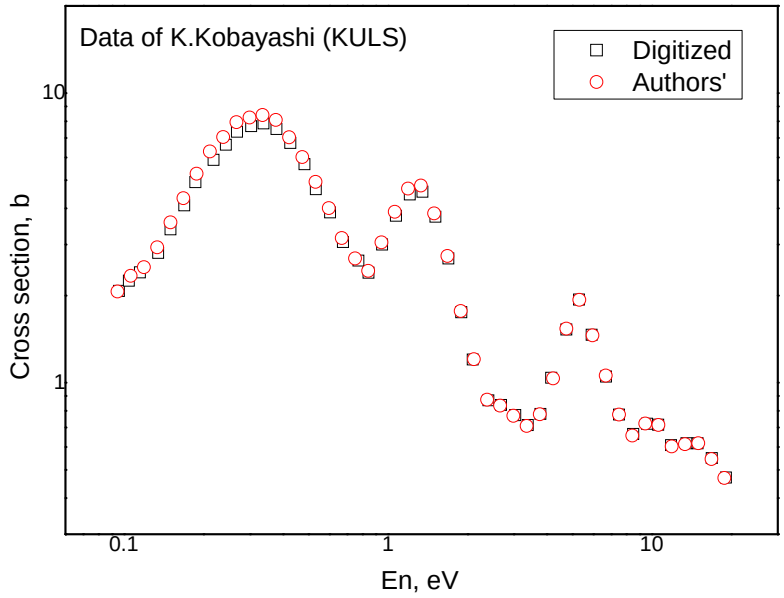


Fig.7. Comparison of the experimental fission cross section of ^{241}Am [10] with the present measurement

Data of V.Gerasimov were digitized as data of present experiment. Digitizing errors given by digitizer:

```
EN-ERR-DIG ERR-DIG                                          41369010   15
PER-CENT   PER-CENT                                         41369010   16
0.17321E-010.73536E-02                                      41369010   17
```

To estimate error of digitized data of V.Gerasimov the data of K.Kobayashi were also digitized and compared with authors' ones given in EXFOR.



Then deviation of digitized data from author's ones were calculated using Origin (OriginPro7.5) program – for deviation in energy En and deviation in cross-section values. Minimal, maximal and mean values were calculated and given in Table:

Deviation in :	Estimated using KULS data			Error given by digitizer
	minimal	maximal	mean	
En,%	0.032	3.39	1.07	0.017321
cross-section,%	0.038	7.37	2.65	0.0073536

As for EN as for cross-section the error given by digitizer is essentially less than the minimal relative deviation of digitized data from authors' ones.

As result a COMMENT in Entry 41369.010 was inserted:

```
COMMENT     Of compiler. Accuracy of digitized data was estimated
            by digitizing the KULS data of Fig.7 right of
            ISINN-5,348. These digitized data were compared with
            authors' ones (given in 22479.002).
            Deviation in energy: min 0.032%, max 3.39%, mean 1.07%.
            Deviation in c-s : min 0.038%, max 7.37%, mean 2.65%.
            Quality of Fig.5 of S,ISINN-5,361 looks like better
            than the KULS data figure. So accuracy of digitized
            data (given in DATA block) could be expected to be of
            the same or less value of errors, excluding in region
            of data essential overlapping at low energy.
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Conclusion:

Such estimation of digitized data error will be useful for users for clear understanding of quality of digitized data.

Proposal: Add recommendation to compilers to estimate the errors of digitized data using this described method, where it's possible.