

Report from WPEC SG30 (A23)

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WPEC Subgroup 30

Quality Improvement of the EXFOR database

- Short-term subgroup
 - Established in 2007
 - Closed in June 2010
- Several batches of suspicious data submitted to NRDC during lifetime:
 - 2008: WP2008-03
 - 2010: WP2010-10 and memo CP-D/623
 - 2010: WP2010-11 and memos CP-D/627,633

WPEC SG30 Report

- Final report published in 2011
 - www.oecd-nea.org/science/wpec
- Translation process from EXFOR to user friendly tabulated data files (extended C4)
- Various methods developed to verify and correct the content of the database

« End of the beginning »

➤ Several activities established:

- Distribution of EXFOR in C4 format
- Automatic test of C4 data and comparison with TALYS/TENDL
- Development of C4 correction system to collect and apply evaluator's feedback (e.g. normalization)
- Compilation and monitoring of coding mistakes

Method implemented at NEA DB

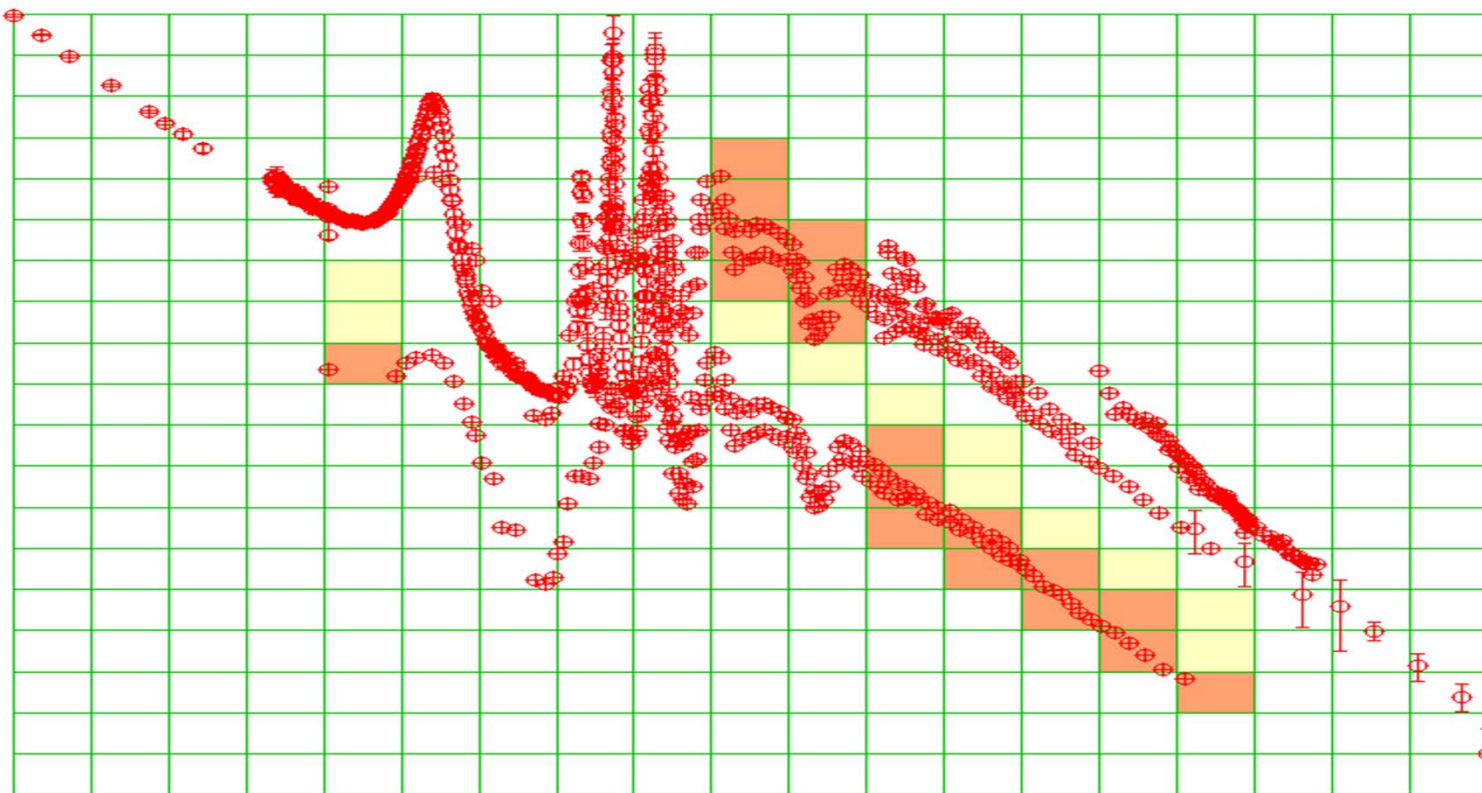
- Statistical approach to detect outliers
- Overview is given in Appendix of WP2011-17 and will be published in NEA News

Method overview (1)

- Group together comparable EXFOR data in clusters:
 - Same reaction
 - Same variables (X and Y axis)
- Determine the optimal scales for representing each cluster:
 - Optimal scale -> plotting of data as evenly spaced as possible
 - Polynomial scale (degree 1=linear, higher degrees ~ logarithmic)

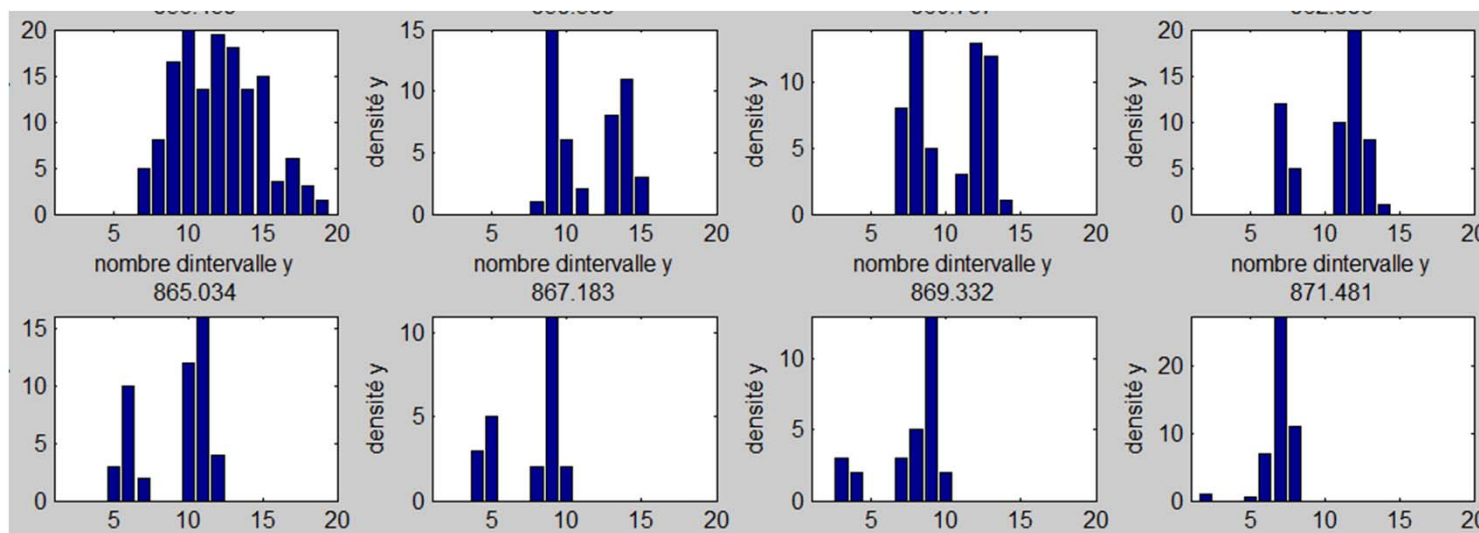
Method overview (2)

➤ Discretization of the space



Method overview (2)

- Determine the distribution of data points in each X axis slice



Results

- Output of the method analyzed for cross-section data of area 2 and O
- 44 subentries reported as suspicious
- Sent to IAEA-NDS for cross-checking with articles

	Area 2	Area O	Areas 2 and O
Not an error	4 (15%)	5 (28%)	9 (21%)
Error	18 (70%)	9 (50%)	27 (61%)
Not resolved yet	4 (15%)	4 (22%)	8 (18%)
Total	26	18	44