

Work Report

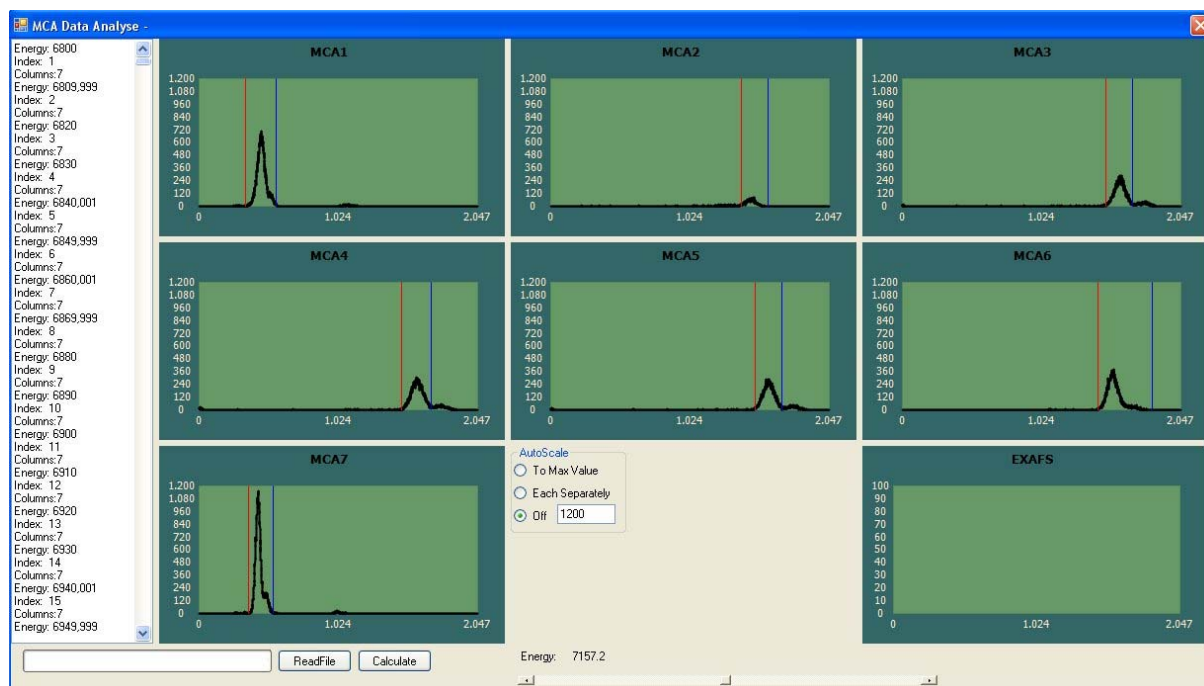
DESY Summer Student Programme 2007

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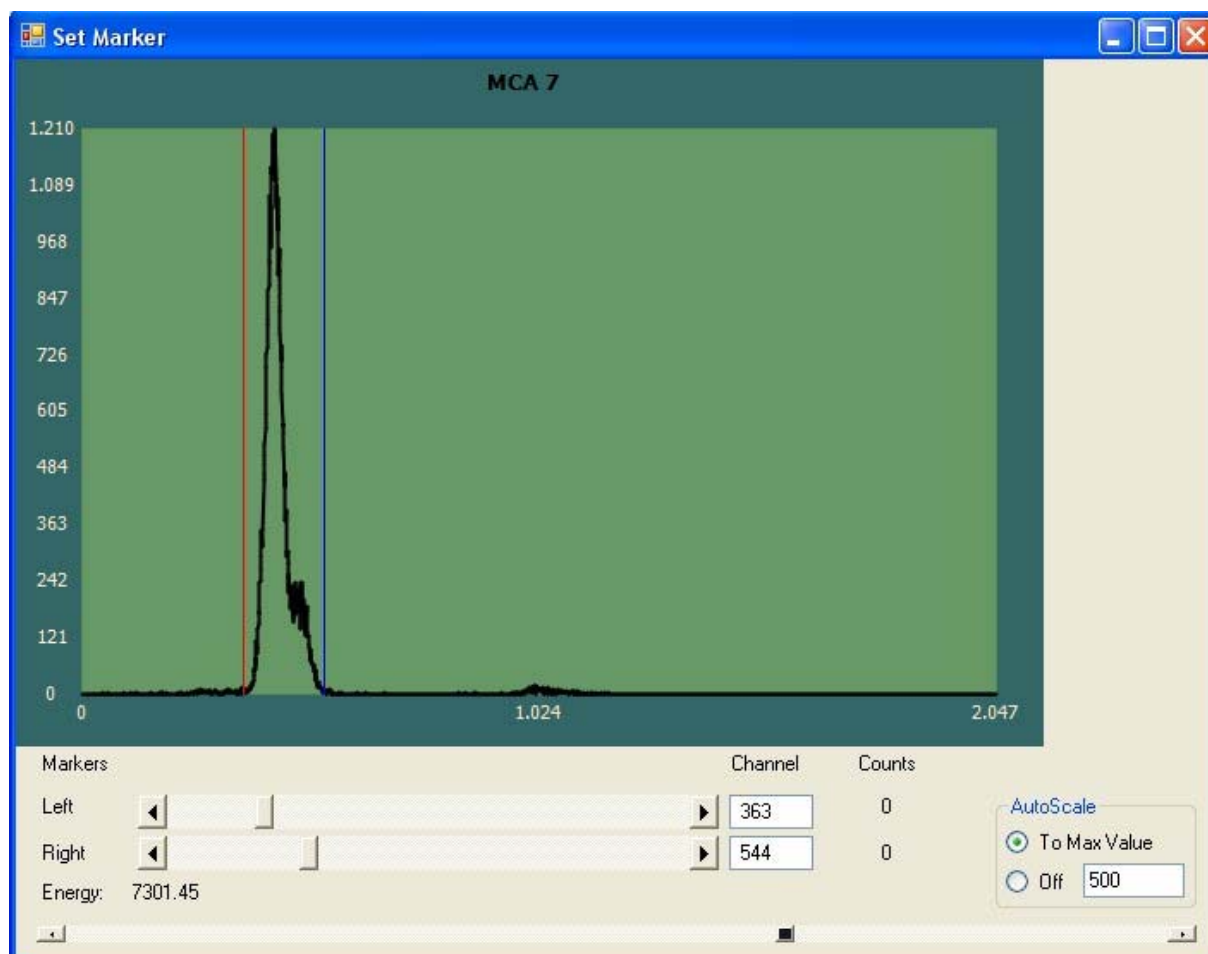
Supervisor: Dariusz Zajac

My main goal, here at DESY was to write a new program for EXAFS, XANES analysis and data visualization of MCA data from fluorescence detectors. EXAFS, XANES experiments with a fluorescence detector allow to collect data in the fluorescence mode with the energy resolution, which results in large amount of data. The program allows to quick check of energy range choosed by the users as well as analysing of already collected data (MCA spectra).

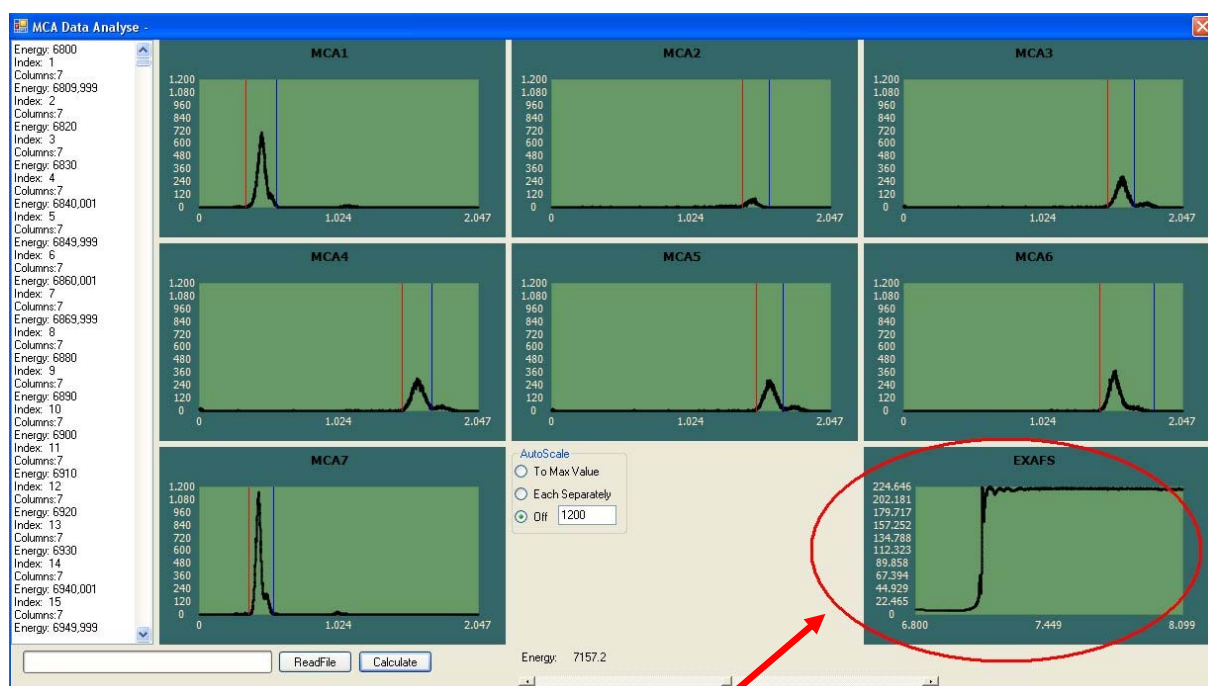
Program already can read a fluorescence spectrum from up to 7 channels, visualize all of them in one window with energy dependence. Energy of displayed spectras can be easily changed by just moving a scrollbar.



For spectra from each channel, markers can be set to integrate only through data from selected scope. There is provided additional window only for setting markers.



After integration, we can see EXAFS spectrum in marked chart.



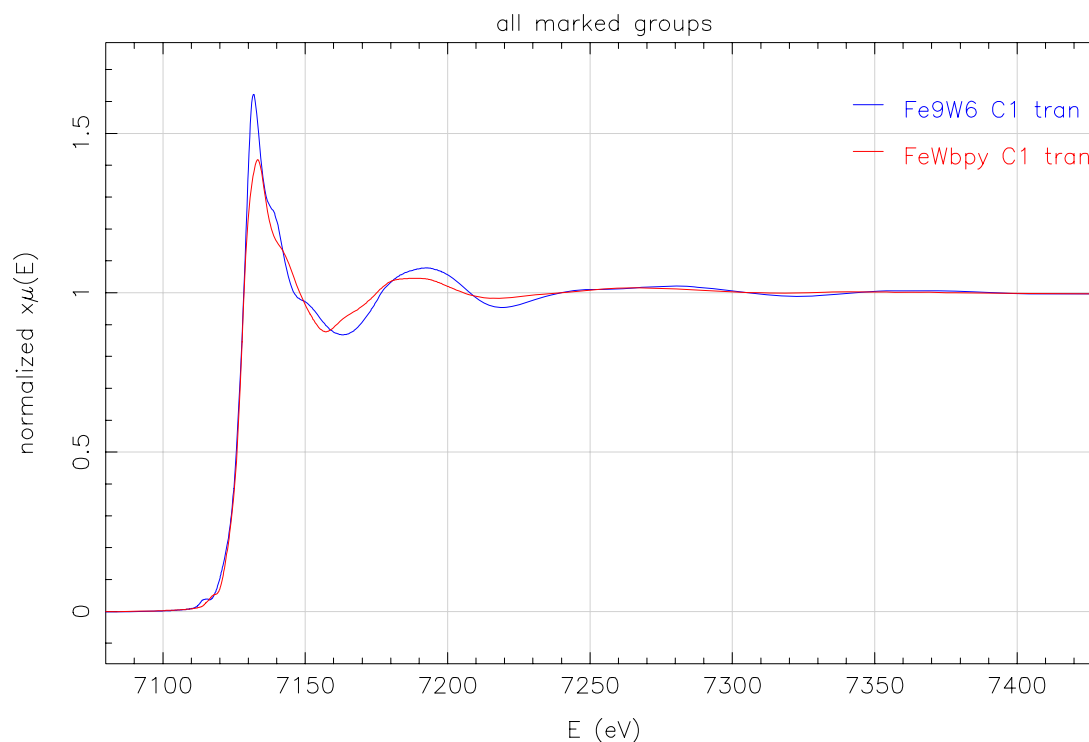
Program is written in Visual Basic 2005 for WindowsXP system. Program requires great amount of RAM, around 300MB because all spectra are read into memory but it significantly increases speed of all calculations.

There are few functions which I want to add to program. For example reading data from different file formats and saving spectra in different format, it should increase speed of reading data. To full functionality it needs only manual.

Apart from that I participated in E4 beamline calibration and TiO_2 EXAFS measurements at exercise week. And on occasion of my supervisors beamtime at X1 I helped in full experiment setup. Including sample and gas changing, energy adjustment and calibration. I also participated in measurements at other EXAFS beamlines: A1 and CEMO

I had a possibility to measure two molecular magnetic samples to my Master of Science thesis. Analysing these spectras improved my EXAFS data analysis skills with Ifeffit packet.

Normalised EXAFS spectra



Spectra in R space:

