Armando Solé, ESRF**, Tutorial: Spectra and image processing with PyMca**

0. Getting used to the program:

- Opening of several files
- Use of the ADD, REMOVE, REPLACE options
- Zoom handling
- Definition of regions of interest (ROIs)
- Active curve selection
- Different data saving options
- Save settings

1. Energy calibration

- Enter a known calibration
- Calibration from known elements
- Calibration from the excitation energy
- Save the calibration list
- Select the active calibration

2. Qualitative fitting

- Peak identification
- Fit function selection
- Base line selection
- Save the fit configuration

3. Quantitative fitting

- Material definition
- Matrix definition
- Matrix spectrum and confidence limits

4. ROI imaging

- ROI definition
- Generate spectra of different sample regions
- Compare different ROI images
- Use of the different saving options
- Use PCA and NNMA

5. Batch fitting

- Prepare a batch optimized fit configuration file
- Start a batch
- Analysis of the results

6. Fast XRF fitting

- Learn how to achieve maximum speed

7. The fisx library

- Learn how calculate n-order excitation corrections using the fisx library

8. XMI-MSIM

- Learn how calculate n-order excitation corrections using XMI-MSIM

9. Matrix Refinement

- Learn how to automatically refine the sample matrix

10. Modifying PyMca