



USER MEETING 2016

24-25 NOVEMBER

National Centre for Synchrotron Science



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Australian Synchrotron

Contribution ID : 205

Type : Oral

How to get the most from your XFM data: GeoPIXE analysis on MASSIVE

Friday, 25 November 2016 15:00 (15)

Richly detailed high definition elemental images are routinely collected during experiments at the X-ray Fluorescence Microscopy (XFM) beamline [1]. In addition, complex 3D data sets may be collected - X-ray fluorescence tomography and/or XANES image stacks. For many experiments there can be up to ¼ TB of raw data to process from a 3 to 4 day visit.

This presentation will describe the latest workflow now available to all AS users for GeoPIXE analysis [2,3] on MASSIVE. Users can take advantage of the powerful combination of GeoPIXE software and parallel computing on MASSIVE. An account is automatically created for new users and a dedicated project created on MASSIVE for each experiment.

Users can continue data analysis with GeoPIXE in the same remote desktop environment they employed during their experiment and easily collaborate and share data amongst experiment participants. The local computing requirements to run a MASSIVE desktop are modest, a laptop is sufficient, although connection to a high definition display is useful.

Continued investigation and reprocessing of elemental images (potentially with new two-pass multiphase method [4]) along with extraction of integrated spectra from regions of interest to verify rare and dilute elements can be accomplished quickly and efficiently. Users can now get the most from their rich data sets by continuing to deeply interrogate and explore their samples using GeoPIXE analysis on MASSIVE.

[1] D. Paterson et al., AIP Conference Proceedings 1365, 219 (2011).

[2] C. G. Ryan, Int. J. of Imaging Systems and Tech. 11, 219 (2000).

[3] C. G. Ryan et al., J. of Physics: Conf. Series 499, 012002 (2014).

[4] D. L. Howard et al., Australian Synchrotron User Meeting 2016.

Keywords or phrases (comma separated)

Are you a student?

No

Do you wish to take part in the Student Poster Slam?

No

Are you an ECR? (<5 yrs since PhD/Masters)

No

What is your gender?

Male

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Session Classification : Concurrent Session 4: Technique Development

Track Classification : Technique Development