

## SOFTWARE FOR ANALYSIS AND REDUCTION OF 2-D DATA

S.C. Vogel<sup>1</sup> & K. Knorr<sup>2</sup>

<sup>1</sup>Los Alamos National Laboratory, Los Alamos, NM 87545, USA.

<sup>2</sup>Christian-Albrechts-Universität zu Kiel, 24098 Kiel, Germany

### **Abstract**

Two-dimensional detectors are standard at synchrotron facilities and are available at many laboratory X-Ray sources. In this presentation, we will review available software for the analysis and reduction of the resulting datasets from powders. Calibration of the detector geometry and reduction of the two-dimensional data into conventional  $I(\theta)$  data for further analysis are the most basic tasks for this kind of software. Rejection of out-layers, e.g. single crystal spots from diamond anvil cells, or noise reduction are also possible. Recently, the analysis of the sample texture from intensity variations around Debye-rings derived directly from 2D datasets became possible. Two-dimensional detectors are frequently used for parametric studies, where the structural changes of a system are investigated as a function of temperature, pressure, or uni-axial stress. Such studies typically result in a large number of similar datasets, which requires the possibility to automate the analysis.