Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Investigation of the experimental effects on the quality of the rapid acquisition pair distribution function (RA-PDF) data[1] AHMAD S. MASADEH, Department of Physics, University of Jordan, Amman 11945, Jordan — Series of experiments have been carried out to investigate the quality of the recently developed rapid acquisition atomic pair distribution function (RA-PDF) method, which combines the uses of high energy X-rays and an image plate area detector. Image plate data for simple elements (C, Mg, Al, Si, Ni, Cu, Zn, Ag, and Pb) have been analyzed, using (RA-PDF) technique. The affect of undiscriminated Compton and fluorescence is investigated for a wide range of materials with atomic Z numbers ranging from 6(Carbon) and 82 (Pb). We find the RA-PDF method is capable of obtaining high quality PDFs where quantitatively reliable structure information can be extracted.

[1]We would also like to acknowledge Dr. Simon Billinge group at NSLS and The University of Jordan for the support.This work was supported in part by (NSF) grant DMR-0304391.Use of the APS is supported by the U.S. DOE, Contract No. W-31-109-Eng-38.

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Date submitted: 09 Nov 2012 Electronic form version 1.4