

MS45 What is inside the black box?

MS45-1-1 Hybrid photon counting detectors - black boxes or powerful tools?

#MS45-1-1

M. Müller¹

¹**DECTRIS Ltd. - Baden (Switzerland)**

Abstract

Detectors play a key role for the data quality that can be achieved in a diffraction experiment. Their mode of operation and detector specific data corrections are important factors to consider when choosing data acquisition strategy and parameters in order to achieve best possible data quality. To use Hybrid Photon Counting (HPC) detectors not just as black boxes but as extremely powerful tools for X-ray detection, it is helpful to understand the underlying mode of operation and the data corrections performed by the detector and analysis software.

In this presentation I will outline the mode of operation of modern HPC detectors, providing a basic understanding of the critical steps from initial X-ray detection to corrected images provided to the experimenter. This basic understanding will help any experimenter to choose data acquisition strategy and parameters that fully exploit the advantages of modern HPC detectors and provide optimal data quality.