## Applications of area detectors to texture measurements

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The use of 2-dimensional detectors in Quantitative Texture Analysis (QTA) has been pointed out long ago mainly in order to reduce acquisition times, both at x-ray and neutron diffraction instruments [1,2]. Indeed, the necessity to acquire several pole figures to correctly refine the orientation distribution functions makes indispensable their simultaneous acquisitions. Since typically 1000 pole figure points have to be measured, using point detectors creates very often acquisition times over several days, a dramatic drawback particularly at scarce neutron beam times. Historically, the development and use of linear, then curved position sensitive (CPS) detectors helped in reducing the acquisition to several hours [3], even at neutron steady state reactors [4]. Furthermore, it opened the way to the treatment of the whole pattern simultaneously including QTA information and more, a procedure nowadays called Combined Analysis [5]. CCD cameras and image plate systems further offer fast QTA analysis with no loss in the capability of full-profiling the patterns. Curvature of image plate detectors can be operated to create cylindrical solid angles for x-ray instruments, and at neutron lines, shaping parts of cylinders with individual detector plates or wires has been recently developed. For all these 2D-detectors, the aim to reduce the number of sample orientations to be measured has been at least partly achieved.

We will illustrate the main scheme used to construct pole figures and calculate ODFs from area patterns, giving some exemples of the use of Combined Analysis, which includes the determination of structure, phase and microstructure also. One of the last developments allowed by the use of Curved Area PSDs is the determination of Magnetic Quantitative Texture Analysis [6], which we will illustrate also.

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