Poster

Squeezing the most out of your high pressure data

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High pressure crystallography in the home lab has revolutionized the study of materials under extreme conditions. However, obtaining high-quality data for successful structure determination, especially for samples with low symmetry, poses a major challenge. Despite the powerful techniques available, the volume of reciprocal space accessible for X-ray examination is constrained by the shape and size of the Diamond Anvil cell, primarily determined by its opening angle. Additionally, the acquired data suffer from absorption effects from the Diamond Anvils, beryllium powder diffraction, as well as overlapping of sample reflections with those from the diamonds used in the experiment. The latest advancements including the DIAMOND II Ag X-ray sources and the powerful APEX5 software with simultaneous processing and deconvolution of reflections from the sample and the diamond reflections, enable researchers to obtain crystal structures at unprecedented pressures in the home lab with impressive completeness. These advancements have resulted in a surge of high-quality research in fields ranging from geology to materials science. This talk will provide an overview of Bruker's latest hardware and software developments in high pressure crystallography specifically addressing the challenges posed by data acquisition and data processing.