

Oral Contributions

[MS33-03] Volumetric Measurements in High Pressure Crystallography. Kamil F. Dziubek,

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The direct sample compression in a piston-cylinder press is a simple technique employed in investigations of matter for many years. [1] Meanwhile, since the end of the last century, diffraction experiments in diamond anvil cells have become the leading method in high pressure research. [2] Unfortunately, these two approaches are usually performed separately, although complementing the diffraction data with compression is actually an important contribution to the discussion of the results. Volumetric measurements can provide precise volume compression data for liquids and solids, including the magnitudes of volume decrement on freezing and solid-solid phase transitions, and determine precisely the transition pressure. Moreover, independent volumetric and diffractometric experiments can provide complementary cross-checking data. We will present the details of the experimental setup, its operation and procedures for processing the data for a series of organic compounds. As demonstrated by the diversity of examples [3-5] various high pressure phenomena can be accounted for using this complementary approach.

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