

Phase transitions in laser heated diamond anvil cell: observations from in situ and ex situ analyses

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In my contribution, I will present different methods to establish phase diagrams of geomaterials by coupling X-ray diagnostics and Laser-Heated Diamond Anvil Cell. First, I will present different example to establish phase boundaries for solid-solid and solid-liquid phase transitions. I will also discuss the metrology issue related with laser heating experiments. Finally, I will finally present how analysis of recovered samples from high pressure and high temperature conditions can help to confirm in situ diagnostics, and also to place better constrain on phase diagrams under extreme conditions.