ESRF	**Experiment title:** Crystallization and local structure of amorphous germanium under high pressure and temperature	**Experiment number:** HS1947
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Shifts: 18	**Local contact(s):** S. De Panfilis	*Received at ESRF:*

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Report:
The results of the experiment HS1947 have been reported in the paper "Polyamorphic transition of germanium under pressure" PHYSICAL REVIEW B 69, 201201(R) 2004.
The abstract and references of this paper follow below.

Abstract

Pressure-induced transformations in the atomic and electronic structure of amorphous germanium (a-Ge) have been investigated by using x-ray absorption spectroscopy XAS combined with energy-scanning x-ray diffraction. Our data show that an abrupt change in the local structure and in the electron states near the Fermi level occurs in evaporated a-Ge at a pressure of about 8 GPa. The transformation is clearly detectable by a change in the shape and energy shift in the near-edge structures and by an increase of the average first-neighbor distance measured by XAS. The occurrence of this polyamorphic transition is discussed in light of the recent advances in the study of multiple dense fluid phases.

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