Development of GHz Ultrasonic Velocity Measurement in Diamond Anvil Cell: IV

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GHz ultrasonic velocity measurement enables us to measure elastic wave velocities of samples with ~10μm thickness compressed in diamond anvil cell (DAC). Comparing with Brillouin scattering and picosecond ultrasonic, it is the unique technique to measure both P wave and S wave velocities of opaque samples such as iron and its relating materials.
We are conducting measurement of iron samples using the GHz-DAC method. Simultaneously, we are developing the technique towards higher pressure, higher temperature, and higher precision. In the presentation, we would introduce the progress of the GHz method recently achieved and high-temperature GHz method using external heating DAC.

Keywords: GHz ultrasonic velocity measurement, DAC, elastic velocity

