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論文の要約

『**Constraints on the composition of the deep Earth based on high-pressure ultrasonic measurements** (高圧力下超音波測定に基づく地球深部の化学組成の制約)』

By comparing the seismic wave velocity profile with laboratory-based high-pressure sound velocity data of candidate materials, we can infer the chemical composition of the deep Earth, which is key information to understanding the origin and the evolution of our planet. In this thesis, I experimentally measured sound velocities of main candidates in the Earth's lower mantle and core via a combination of the newly installed femtosecond pulse laser pump-probe technique and a diamond anvil cell high-pressure apparatus. The composition of the lower mantle and core was constrained from the comparison between obtained data and the seismic wave observation.