

Abstract Submitted  
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**Detailed dynamic behavior and phase transition of CaF<sub>2</sub> under shock loading**<sup>1</sup> TOSHIMORI SEKINE, TAKAMICHI KOBAYASHI, National Institute for Materials Science — Dynamic behavior and phase transition of CaF<sub>2</sub> under shock loading are not well understood in spite of its important application as optical material. There are several static compression data available and the data indicate a high-pressure transition at a pressure of 8-9 GPa. Our recent spectroscopic study on Eu-doped CaF<sub>2</sub> single crystals suggests a high-pressure phase transition around 15 GPa, based on the luminescence wavelength shift as a function of pressure. In order to confirm it, we carried out the wave profile measurements on single crystals CaF<sub>2</sub> with two different crystal directions. We determined the correction factor for VISAR window. The obtained wave profiles show clear and distinct HEL behaviors and a phase transition through the observed two-wave and three-wave structures. The two crystal directions displayed variations which will be related to the kinetics. The high-pressure phase transition mechanism will be discussed by the obtained wave profile.

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Toshimori Sekine  
National Institute for Materials Science

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