TEMPERATURE DEPENDENCE OF ELASTIC MODULI FOR NaCl

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ABSTRACT

In earlier studies sound velocities and elastic moduli of some minerals like MgO, MgAl$_2$O$_4$, Al$_2$O$_3$, Y$_3$Al$_2$(AlO$_4$)$_3$, and pyrope (Mg$_3$Al$_2$Si$_3$O$_{12}$) up to a pressure of 200 GPa have been analyzed. The Hama-Suito theory of equation of state based on the Augmented Plane Wave (APW) and quantum statistical methods have been used for the determination of pressure-density relationships. In present work, Holzapfel AP2 equation of state is being used for calculating the elastic moduli such as shear modulus, Young’s modulus and Poisson’s ratio as a function of pressure for NaCl. Results thus obtained are furnished and found to be in close agreement with the available experimental data.

KEYWORDS: Shear Modulus, Young’s Modulus, Poisson’s Ratio & Equation of State

Received: Mar 04, 2018; Accepted: Apr 20, 2018; Published: Jul 27, 2018; Paper Id.: IJMPERDAUG201877