Title: Compressibility of an intermetallic compound

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Abstract: This work focuses on the method of using miniature strain gages for the measurement of volume change and strain in hydrostatic pressure. Two state variables are involved in the changes - temperature and pressure. A copper reference material was used to determine the pressure and temperature corrections for the specific type of strain gage used it this work. To demonstrate this method, a pressure dependence of strain was measured up to 2.3GPa for the $CeCuAl_3$ single crystalline sample along particular crystallographic directions. It is studied for its interesting magnetic properties and this work aims to contribute to its complex study. Temperature dependencies of strain under low and high pressure were also measured.

Keywords: high pressure, compressibility, strain gage, $CeCuAl_3$