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Study of naturally occurring Precambrian native iron through high-pressure Mössbauer Spectroscopy up to 10 GPa USHA CHANDRA, Department of Physics, University of Rajasthan,Jaipur 302055, G. PARTHASARATHY, National Geophysical Research Institute (council of Science and Technology) , Uppal Raod, Hyderabad 500606, G. PARTHASARATHY COLLABORATION — We report here the Mössbauer spectroscopic studies on native iron sample obtained from Proterozoic Mica Schist of Chaibasa SinghBhum craton of Eastern India at ambient condition as well as under high pressure up to 10 GPa using Diamond Anvil Cell and 4:1 methanol – ethanol mixture as hydrostatic pressure medium. The results were compared with the studies on metallic iron under high pressure [1,2] . A slight variation in isomer shift up to 5.6 GPa and onset of a new peak corresponding to BCC→HCP transformation at 9.1 GPa might indicate the magnitude of impact experienced by the sample before attaining the thermodynamical equilibrium. [1] Pipkorn D.N., Edge C.K., Debrunner P., De Pasquali G., Drickamer H.G. and Fraunfelder H. (1964) 135, 1604. [2] Chandra usha, Mudgal Prerana, Kumar Manoj, Rawat Rajeev, Parthasarathy, Dilawar Nita and Bandyopadhyay A.K. (2005), Hyper. Inter.163, 129.

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