Many-body electronic structure calculations for Americium metal\textsuperscript{1} SERGEJ SAVRASOV, New Jersey Institute of Technology, GABRIEL KOTLIAR, SAHANA MURTHY, Rutgers University — Total energies and electronic spectral functions for Americium are calculated using novel dynamical mean field based spectral density functional approach. Pressure dependence as a function of volume and bulk modules for different phases of Am will be studied by this many body calculation and compared to the predictions of experiment. Volume dependent spectral functions will be extracted and discussed in connection to the anomalous resistivity behavior showing its almost one order of magnitude increase under pressure. Electron-phonon interactions estimated in the presence of electronic correlations using linear response method shed a new light on superconductivity of this actinide.

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