Abstract Submitted
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Combined effects of chemical doping and pressure on physical properties of $CaFe_2As_2$[1] SHENG RAN, SERGEY BUD'KO, PAUL CANFIELD, Ames Laboratory U.S. DOE and Department of Physics and Astronomy, Iowa State University, MILTON TORIKACHVILI, Department of Physics, San Diego State University — The AFe_2As_2 compounds (A = alkaline earth) are the most extensively studied materials among the FeAs-based superconductors, and $CaFe_2As_2$ is the most pressure sensitive among them. The structural/magnetic phase transition near 170K is suppressed rapidly under pressure and a nonmagnetic, collapsed tetragonal phase is stabilized. Depending on the hydrostaticity of the pressure medium, the superconducting phase may or may not be induced. In this talk we will present the combined effects of chemical doping and pressure on the structural/magnetic phase transition as well as the collapsed tetragonal structure phase transition in an attempt to better understand the interactions between these phases.

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