



University of Crete
Department of Physics

Physics Colloquium

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Tuning magnetic and polar phase transitions with pressure

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ABSTRACT

Novel emergent states such as magnetically mediated superconductivity and unusual normal states were discovered in the vicinity of quantum critical points at low temperature. By tuning the relevant energy scales, including temperature, to be small the quantum mechanical nature of fluctuations becomes important and can dominate the observed properties. In this talk I will describe recent work motivated by this idea but on two very different systems: the quantum paraelectric SrTiO_3 and the 2D van der Waals magnet FePS_3 . Applied pressure is a powerful tool for the exploration of the phase diagrams in both cases.