# Macroscopically superposed ground states of a dipolar Bose gas in a double-well potential

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**Abstract:**

In this talk, I will discuss the ground state properties of a quasi-two-dimensional dipolar gas trapped in a double-well potential. Using the theory of the multiconfigurational time-dependent Hartree for bosons, we obtain the ground state wave function of the system. We show that the interplay between the anisotropic dipolar interaction and the trapping potential gives rise to a rich variety of quantum phases. Of particular interest, in certain parameter regime, the ground state of the system is a macroscopic superposition state of the bosons localized in the left and right potential wells. I will also analyze the origin of the macroscopically superposed ground states.