Dipolar BEC in a double-well potential[1] M. ASAD-UZ-ZAMAN, D. BLUME, Washington State University — The long-range and anisotropic nature of dipole-dipole interactions makes a dipolar BEC a promising and exciting play ground for physicists. This work considers the stability and dynamics of a dipolar BEC in a cylindrically symmetric double-well potential. We are particularly interested in the structure formation, the self-trapping and the Josephson oscillation in the double-well potential and how these behaviors differ from a system with s-wave interactions only. We are using the symmetric and antisymmetric solution of the time-independent Gross-Pitaevskii equation as the basis for the calculation of the Josephson oscillation frequency and compare it with that obtained by solving the time-dependent Gross-Pitaevskii equation.

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