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The phase transition in ground state configurations of a vortex lattice in an AMBEC SUNGJONG WOO, NICHOLAS BIGELOW, Department of Physics and Astronomy, University of Rochester, Q-HAN PARK, Department of Physics, Korea University — We study the ground state vortex configurations in a trapped atomic-molecular Bose-Einstein condensate with nontrivial angular momentum imposed in the system. We have confirmed a zero-temparature phase transition in the ground state vortex configurations between a rectangular lattice and a triangular paired vortex configuration, with rotational speed of the condensate as a parameter, analytically and numerically. A new type of dynamics involving the paired vortex lattice is also discussed.

Nicholas P. Bigelow
Department of Physics and Astronomy, University of Rochester

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