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**Bogoliubov excitations of two-component BEC supported by different vortex configurations** SUNGJONG WOO, STEPHEN CHOI, LESLIE BAKSMATY, NICHOLAS BIGELOW, Department of Physics and Astronomy, University of Rochester — We have studied the Bogoliubov excitations of a rotating two-component trapped BEC with a vortex lattice or vortex sheets using the mean-field formalism. It is known that different ground state configurations of vortex lattices are possible depending on the relative magnitudes of the interaction strengths between particles. We have observed the Tkachenko modes and the hydrodynamic bulk excitations for each vortex configuration, a triangular or rectangular lattice or vortex sheets, and analyze the similarities and differences with a single component case. We also discuss about the dramatic enhancement of the resonance effect of certain surface modes with the vortex dynamics that had been observed before for the single component BEC.

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