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Rotation of supersolids in cold atomic condensates¹ SANKALPA GHOSH, RASHI SACHDEVA, Indian Institute of Technology, Delhi — In the framework of Gross Pitaevskii equation, with non-local interaction, we study the formation of Supersolid phase and the effect of rotation on such a system. The effect of rotation is to induce vortex patterns in such Supersolid phase, whose structures are in principle, different from the ordinary vortex in Superfluids. At sufficiently high rotation, these vortices arrange in the form of a lattice and thus, one has to take into account the interplay of two lattice structures, the Supersolid crystal lattice and the vortex lattice induced by rotation. We aim to study the elastic properties of such a system and compare it with the corresponding superfluid phase.

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