

PS01

## **Incompressible Liquid, Stripes and Bubbles in rapidly rotating Bose atoms at $\nu = 1$ and $3/2$**

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We numerically study the system of rapidly rotating Bose atoms at the filling factor (ratio of particle number to vortex number)  $\nu = 1$  and  $3/2$  with dipolar interactions. As has been known for incompressible liquids at  $3/2$ , moderate dipolar interactions stabilize the incompressible quantum liquid at  $\nu = 1$  and further addition induces a collapse of incompressible liquid. We investigate the states after the collapse at  $\nu = 1$  and  $\nu = 3/2$ . We present evidence that they are compressible states forming stripes or bubbles with a broken translational invariance. The excitation spectra are consistent with the presence of particle-hole excitation where a boson hops between stripes or bubbles.