

Name of the supervisor: Dr. Pankaj Kumar Mishra

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Brief description of research:

My area of research is mainly related to the numerical and theoretical investigation of the ground state and dynamics of ultracold system in particular related with the Bose-Einstein condensate (BEC). We heavily rely over the direct numerical simulation using the mean-field model. At present my group is focusing on several aspects of BEC, such as, quantum droplet, quantum turbulence, Collective excitation spectrum of spinor BEC, Anderson localization of BEC, BEC in ring geometry, etc.

Possible projects for the new student:

In the following I list out few of the projects on which I would like the new student to work:

- (1) Dipolar quantum droplets.
- (2) Turbulence in spinor Bose-Einstein condensate.
- (3) Rotating quantum droplet