



Contribution ID: 19

Type: **not specified**

Effects of curved geometry and finite temperature in dipolar Bose Einstein Condensates

Thursday 25 January 2024 17:30 (20 minutes)

We explore the thermal effects in the phase diagram of a dipolar BEC confined in a tubular geometry, and show that temperature significantly shifts the low density point where the order of the phase transition between the supersolid and fluid phases changes. We also investigate the effect of a shell-shaped confinement in dipolar physics at zero temperature, and show that it leads to the emergence of a rich variety of ring-shaped solids and supersolids.

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Session Classification: Day 1