

Dipolar quantum gases, droplets and supersolids

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Dipolar interactions are fundamentally different from the usual van der Waals forces in real gases. Besides its anisotropy the dipolar interaction is nonlocal and as such allows for self organized structure formation, like in many different fields of physics. Although the bosonic dipolar quantum liquid is very dilute, stable droplets and supersolids as well as honeycomb or labyrinth patterns can be formed due to the presence of quantum fluctuations beyond the mean field theory. I will shortly review the history of the field and then focus on recent results

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