

Seminar on Condensed Matter Theory

Group of Theoretical Physics at the Department of Condensed Matter Physics of Charles University has a pleasure to invite you to attend the seminar

**on 8 October 2020 at 13:00
as an online webinar**

Contact K. Carva (carva@karlov.mff.cuni.cz) for the online access information.



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Magnetism in 2D van der Waals halide VI₃: first principles calculations

Magnetic van der Waals (vdW) materials composed of two-dimensional (2D) layers bonded to one another through weak interactions exhibit promising potential for high-tech magnetic, magneto-electric and magneto-optic applications in nanoscale structures.

Due to their intrinsic magnetocrystalline anisotropy, several vdW magnets could be thinned down to monolayers, while still maintaining magnetism. A prominent example of such materials are transition metal trihalides, in particular CrI₃, a first atomically thin ferromagnet, realized in 2017.

Recently, VI₃ has been found to belong among 2D ferromagnets at temperatures below 50K. It is a semiconductor undergoing subtle structural phase transition at 78K. Calculations show that it is a Mott insulator. Furthermore, its magnetic anisotropy exhibits rather unusual features. We have studied its properties by first principles calculations and reproduced the observed magnetic anisotropy. Its properties have been linked to lattice distortions present at some of its low temperature phases.



For more information follow: theory.kfkl.cz/seminars.php

If you wish to receive regular updates on forthcoming seminars, contact K. Carva (carva@karlov.mff.cuni.cz).