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Van der Waals interactions in density functional theory

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The van der Waals density functional which we introduced half a decade ago and its self-consistent generalization will be briefly reviewed. There are many collaborators in the application review that will follow, not only those who worked in the physics department at Rutgers and at Chalmers, but also at Denmarks Technical University, the chemistry department at Rutgers, and most recently at the University of Texas at Dallas. I will expand on our recent review article, which hopefully will be published before the present talk, and include applications by other groups not listed below. If possible, I will also review results from a more recent collaboration to study nucleosomal DNA and beyond.

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4Maxime Dion, Aaron Puzder, T. Thonhauser, Valentino R. Cooper, Shen Li, Eamonn Murray, Lingzhu Kong, and Kyuho Lee.
5Henrik Rydberg, Svetla Chakarova-Käck, Jesper Kleis, Elsebeth Schröder, Per Hyldgaard, and Bengt I. Lundqvist.
6Andrei Kelkkanen, Poul G. Moses, Jesper Kleis, and Bengt I. Lundqvist.
7Konhoa Li, Jing Li, Yves Chabal, and Wilma K. Olson.
8Nour Nijem and Yves Chabal.