

TESTING FUNDAMENTAL PHYSICS WITH COLD ATOMS AND MOLECULES

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Cold and ultracold molecules provide a sensitive way to search for new physics, e.g. variation of fundamental constants, dark energy, or new elementary particles. I will describe some of these ideas, with particular emphasis on the search for a permanent electric dipole moment of the electron, which already provides a strong constraint on possible supersymmetric theories of particle physics. Laser cooling can now be applied to molecules. I will discuss the recent advances in that area and the extraordinary sensitivity that this new approach can bring to tests of fundamental physics.

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CFEL
SEMINAR ROOMS I-III

