
Non-conventional superfluids of lattice fermions

Aleksey Fedorov^{*1}

¹Laboratoire de Physique Théorique et Modèles Statistiques (LPTMS) – CNRS : UMR8626, Université Paris XI - Paris Sud – Bâtiment 100 Université Paris-Sud Centre Scientifique d’Orsay 15 rue Georges Clémenceau 91405 Orsay cedex, France

Résumé

Recently suggested subwavelength lattices offer remarkable prospects for the observation of novel superfluids of fermionic polar molecules. It becomes realistic to obtain a topological p-wave superfluid of microwave-dressed polar molecules in 2D lattices at temperatures of the order of tens of nanokelvins, which is promising for topologically protected quantum information processing. Another foreseen novel phase is an interlayer p-wave superfluid of polar molecules in a bilayer geometry.

^{*}Intervenant