

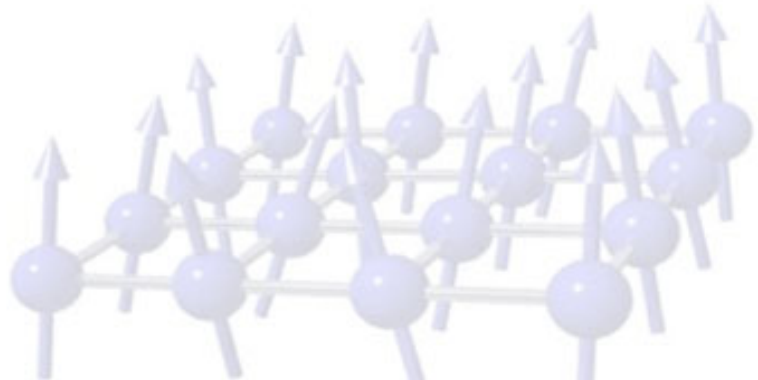
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Cooling lithium atoms for future polaron experiments

In solid state physics, an electron that moves on an ion lattice and disturbs it through coulomb interaction can be described as the quasiparticle polaron.

Quantum gases can be used to create polaron-like systems and mimic the solid state physics. To this end, a new two-species quantum gas experiment is discussed. A Bose-Einstein condensate of sodium will play the role of a background medium in which lithium impurities will move and acquire polaronic properties. The emphasis of the presentation lies on the implementation of a laser cooling system for lithium.

Furthermore, the properties of our magneto-optically trapped lithium are presented. Finally, the last steps towards the polaron experiments are discussed.



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