



ID de Contribution: 12

Type: Non spécifié

Bond polarons (ONLINE presentation)

vendredi 10 septembre 2021 15:00 (1 heure)

Polarons with different types of electron-phonon coupling have fundamentally different properties. When the dominant interaction is between the electron density and lattice displacement, the momentum of the ground state does not change and the polaron gets exponentially heavy at strong coupling. In contrast, one-dimensional and two-dimensional Peierls/Su-Schrieffer-Heeger (PSSH) polarons with interaction originating from displacement-modulated hopping may feature a shift of the ground-state momentum to finite values and appear to have moderate values of effective mass as coupling is increased. I will discuss recent Diagrammatic Monte Carlo data for two different models of bond polarons, as well as new results for bi-polarons with arbitrary on-site Hubbard repulsion U . This study is motivated by the possibility of having light bi-polarons in the strong coupling regime with high superconducting transition temperature.

Orateur: Prof. PROKOFIEV, Nikolay (UMass, Amherst)