Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **542** Type: **Invited Speaker / Conférencier(ère) invité(e)**

(I) Pushing the Size of the Quantum Cluster Numerical Simulations

Wednesday 9 June 2021 11:54 (5 minutes)

A method to calculate the one-body Green's function for ground states of correlated electron materials is formulated by extending the variational Monte Carlo (VMC) method [1]. We apply the method to larger-sized Hubbard model on the square lattice correctly reproduces the Mott insulating behaviour at half-filling and gap structures of d-wave superconducting state on the 12 by 12 cluster of the Hubbard model.

[1] Charlebois M, and Imada M., Phys. Rev. X, 10:4(041023) (2020)

Primary author: CHARLEBOIS, Maxime (Université du Québec à Trois-Rivières)

Presenter: CHARLEBOIS, Maxime (Université du Québec à Trois-Rivières)

Session Classification: W1-9 Superconductors and other Quantum Materials (DCMMP) / Supraconducteurs et autres matériaux quantiques (DPMCM)

Track Classification: Condensed Matter and Materials Physics / Physique de la matière condensée et matériaux (DCMMP-DPMCM)