Contribution ID: **1030**   Type: **Invited talk in the parallel session**

Essential Self-Adjointness of Dirac operators under the influence of general-relativistic gravity

Monday, 5 July 2021 18:10 (20 minutes)

Physical reasoning give expressions for the Hamiltonian of a system. These Hamiltonians are differential operators that are mostly symmetric in a densely defined domain.
However, to study the dynamics of the unitary group corresponding to a Hamiltonian, it is required that the Hamiltonian be self-adjoint or essentially self-adjoint. I will present our study on how the static non-linear electromagnetic-vacuum space-time of a point nucleus affects the self-adjointness of the general- relativistic Dirac Hamiltonian for a test electron.

Primary author: Dr TOPRAK, Ebru (Rutgers University)

Co-authors: KIESSLING, Michael (Rutgers University, Dept. of Mathematics); TAHVILDAR-ZADEH, A. Shadi (Rutgers University)

Presenter: Dr TOPRAK, Ebru (Rutgers University)

Session Classification: Mathematical Problems of Relativistic Physics: Classical and Quantum

Track Classification: Alternative Theories: Mathematical Problems of Relativistic Physics: Classical and Quantum