International workshop on

Reduced Density Matrix Theory for Quantum Many-Fermion Systems

San Sebastian, 15-18 June 2020

organized by David A. Mazziotti, Mario Piris, Christian Schilling

The interdisciplinary workshop brings together experts from the quantum sciences, particularly quantum chemistry and quantum information theory to elaborate on conceptual aspects of interacting quantum many-fermion systems. The aim is to discuss recent ideas and identify open challenges related to the determination of the energy and properties of interacting fermions in terms of reduced density matrices (RDMs). Topics will explore the theory and applications of both ground and excited states as well as time-dependent processes. The workshop comprises the following connected thematic blocks:

(I) geometry of RDMs & concept of fermionic correlation/entanglement

(II) 1- & 2-body N-representability problem

(III) 1RDM- & 2RDM-functional theory (ground states)

(IV) excited states & time-evolution

invited speakers

Diego R. Alcoba	Mel Levy
Paul Ayers*	Eduardo Ludena
Carlos Benavides-Riveros	Tomasz Maciazek
Eugene DePrince	Kasia Pernal
Robert Erdahl	Stefano Pittalis
Federico Evangelista*	Pina Romaniello
Emmanuel Fromager	Andrew Sand*
Laura Gagliardi*	Alexander Sokolov
Klaas Giesbertz	Felix Tennie
Eberhard K.U. Gross	Geza Toth
Martin Head-Gordon*	Frank Verstraete
Erik Hoy	Zoltan Zimboras

*: tbc

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