Kolloquium Physik

Prof. Dr. Roser Valenti
Goethe-Universität Frankfurt

Computational design of correlated materials: challenges and opportunities

Hörsaalgebäude II
Hörsaal 2

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16:30 Uhr

Kolloquiums-Kaffee ab 16:00 Uhr
im Raum P2-E0-414

Alle sind herzlich eingeladen

Im Auftrag der Dozenten der Fakultät Physik
Der Dekan

Einladender: Prof. Dr. Frithjof Anders
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Unconventional superconductivity with high critical temperatures, frustrated magnetism, spin liquid behavior, colossal magnetoresistance, heavy fermions, Kitaev-like physics are a few examples of exotic phases in correlated materials. In a correlated system electrons experience strong Coulomb repulsion and one of the big challenges in solid state physics is the microscopic description of such systems. Moreover, being able to understand these materials implies the possibility of designing compounds with desirable properties.

In this talk I will review the world of some families of correlated materials ranging from unconventional superconductors, frustrated magnets and possible correlated Dirac metals and present some strategies on how to model them microscopically.