

Plenary talks (PV)

Prize Talk PV XI Thu 13:00 H1
Electronic Correlations in Models and Materials — ●DIETER VOLLHARDT — Center for Electronic Correlations and Magnetism, University of Augsburg, D-86135 Augsburg, Germany — Träger der Max-Planck-Medaille
Correlations among electrons strongly influence the properties of solids. For example, they can lead to the transition from metallic to insulat-

ing behavior, long-range magnetic order, or lattice transformations. In my talk I will first describe characteristic correlation phenomena and explain them on a model level using the dynamical mean-field theory. This discussion is then extended to real materials. Here a combination of ab initio methods for the calculation of band structures and the dynamical mean-field theory has recently led to important new insights into the fascinating properties of correlated electron materials.