

SFB 608

Einladung zum Kolloquium

Ort: Universität zu Köln
II. Physikalisches Institut
Seminarraum 201

Zeit: 22.10.2008, 14:30 Uhr

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Thema: The Rise and Fall of Superconductivity
under Extreme Pressure: How to Drive a
Normal metal Crazy

Studies of the effect of high pressure on superconductivity began in 1925 in Leiden with the seminal work of Sizoo and Onnes on Sn to 300 bar and have continued up to the present day to pressures in the 2 to 3 Megabar range. Such enormous compression causes profound changes in all condensed matter properties, including insulator-to-superconductor transitions and the creation of “crazy metals” whose properties defy conventional textbook wisdom. An example for the latter is the counter-intuitive pressure-induced metal-to-semiconductor transition very recently observed in Li metal. At 1.6 Megabar the superconducting transition temperature of elemental Ca reaches 25 K, a value surpassing that of any known superconductor prior to the discovery of the high- T_c cuprates in 1986. These and other recent experimental results will be discussed.

Gez. J.A. Mydosh