



PAUL SCHERRER INSTITUT

PSI Colloquium

A Quarter Century of High Temperature Superconductors

Professor Dr. T. Maurice Rice
ETH Zürich

DATE : Friday, March 16, 2012
COFFEE: 11:00 am
SEMINAR: 11:15 am
PLACE: WHGA/001

Abstract:

A quarter century has passed since high temperature superconductivity was discovered by Bednorz and Mueller in the cuprates. Yet, today controversy and debate continues among theorists as to the correct microscopic description of these fascinating materials. This is in a way surprising since the underlying microscopic model looks simple, but this is deceiving as the model is a strongly interacting fermionic model, very difficult to treat analytically or numerically. Further, many anomalous properties are not a simple consequence of a broken symmetry. There has been great progress on the experimental side: better samples, new techniques and better resolution. This situation encourages one to lower sights and try a phenomenological approach to obtain a consistent description that links the many anomalous properties of these very special materials. Insights obtained in this way will be the focus of the talk.