

Colloquium on Solid-State Physics

Date: Tuesday, May 14, 2013
Time: 16:00 h
Place: Hörsaal HS 3
Physik - Department
Technische Universität München



Seminar of the Collaborative Research Centre/Transregio TRR 80:

Fermi Surface Determination Using Positron Annihilation

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Positron annihilation is perhaps one of the less well-known methods for measuring the Fermi surface. In this talk, I will explain how one can determine the Fermi surface topology of a metallic system using positrons, highlighting its advantages as well as its limitations. I will focus on materials where other probes (such as quantum oscillatory techniques or ARPES) have not been so successful, as well as materials where the positron can provide unique information by virtue of where it chooses to annihilate. I will describe also some recent measurements in the ferromagnetic shape-memory alloy Ni_2MnGa and in MnSi , and emphasise how recent advances in computational resources have permitted a substantial improvement in positron annihilations' ability to provide reliable quantitative information.