



Sonderforschungsbereich 631

Festkörperbasierte Quanteninformationsverarbeitung



im Juni 2005

SEMINARANKÜNDIGUNG

Dienstag, 07. Juni 2005

17.15 Uhr

WSI, Seminarraum S 101

„ Transport in shunted surface superlattices: Stable electrically excited Bloch oscillations “

For more than 30 years superlattices have been proclaimed as an active gain medium in the THz regime. But due to field instability problems an active oscillator has so far been impossible to realize. In this talk a new approach will be discussed in which the field is stabilized by a side shunt. Such a structure requires two perpendicular growth steps to which the Cleaved-Edge-Overgrowth method can be conveniently applied. The talk will address the instability problem in superlattices and how it can be avoided in shunted surface superlattices. Then the transport properties of these structures are presented both for the static case and for externally applied magnetic and high-frequency fields. Finally, the possibility of realizing an active THz emitter with this approach is discussed.

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