SFB/TRR 21 - Seminar

5. Oktober 2011, Stuttgart

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Study of elastoplastic properties of polycrystals based on neutron diffraction data

Information concerning deformation in polycrystalline materials is necessary to choose the right material for appropriate industrial applications. The most useful tool for this is neutron diffraction applied to measured lattices strains during tensile test or in unloaded sample. In presentation I will focus on some of my results for multi-phase materials: duplex stainless steel and Al/SiC composite. Experimental data were successfully compared with theoretical predictions and provided significant information concerning stress localization on groups of grains of different lattices orientations in case of steel and some incompatibility stresses in a composite.

5. Oktober 2011, 14:45 Uhr

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