

Nucleation and microstructure in martensitic phase transformations

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When a new phase is nucleated in a martensitic phase transformation, it has to fit geometrically onto the parent phase. Likewise, microstructures in individual grains of a polycrystal have to fit together across grain boundaries. The talk will describe some mathematical issues involved in understanding such questions of compatibility and their influence on metastability, drawing on collaborations with C. Carstensen, P. Cesana, B. Hambly, R. D. James, K. Koumatos and H. Seiner.