

Symposium | A. Advances in Materials Theory for Multiscale Modeling

[SY-A5]Symposium A-5

Chair: Sinisa Dj Mesarovic(Washington State University, United States of America)

Wed. Oct 31, 2018 9:45 AM - 11:00 AM Room6

[SY-A5]Parameters to consider in the modelling of dislocation boundary evolution

Invited

○Grethe Winther Winther (Technical University of Denmark, Denmark)

An essential part of the development of theory and simulations of microstructure evolution is the parameters used as input as well as the output, which should be comparable to experimental observations. An overview of the experimentally observed dislocation boundary evolution in metals of medium to high stacking fault energy are presented with emphasis on such parameters. In particular, the spatial distribution of boundaries in terms of boundary planes, spacings and misorientation angles are considered as a function of crystallographic grain orientation, deformation mode and strain. Based on the experimental observations relations to crystal plasticity and the Burgers vectors available for boundary formation are discussed.