

The Condensed Matter Theory / Computational Materials Science Seminar

CMT/CMS seminar

Date & Time: July 26th 2:00pm
Place: 8F large seminar rm, Sengen main bldg
Speaker: Dr. Machiko Ode
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Title:

Recent theoretical developments on phase-field models

Abstract:

The phase-field model is known in the field of computational material science to be a powerful tool for describing microstructure evolution. The major advantage of this approach over previous methods is that all governing equations are written in a unified manner throughout the entire system under consideration. Beginning with the initial success in reproducing complex dendrite growth in undercooled pure melts, numerical simulation incorporating the phase field model has since found applications in areas such as the solidification of alloys and solid-solid phase transformation.

In this talk, I briefly review recent theoretical developments which have broadened the range of application of this technique. I will also illustrate the utility of this method through several examples of actual numerical analysis.

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