What is the thickness of an ice layer over a heated liquid?

(Bi-stabilité diffusive-convective en présence d'un changement de phase)

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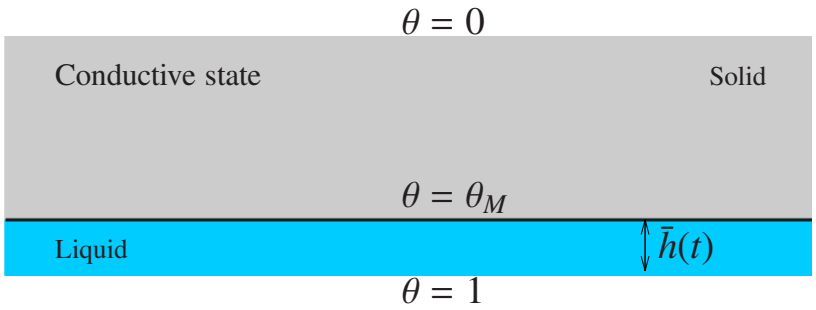
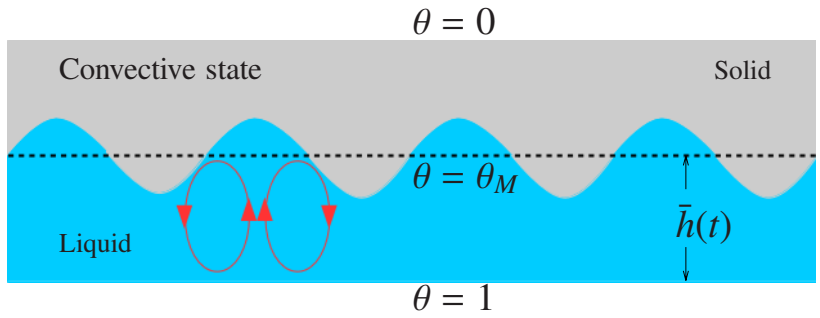


(a) Diffusive heat fluxes in both phases



(b) Convective heat flux in the liquid and diffusive heat flux in the solid

- Numerical study of an interaction between a phase-change and a convection.
- A pure and incompressible substance is considered.
- The solid is cooled from above and the liquid is heated from below.
- Equilibrium states or partial melting of the solid occur when the heat flux in the solid is balanced by the heat flux in the liquid.

Equilibrium states - diffusive or convective