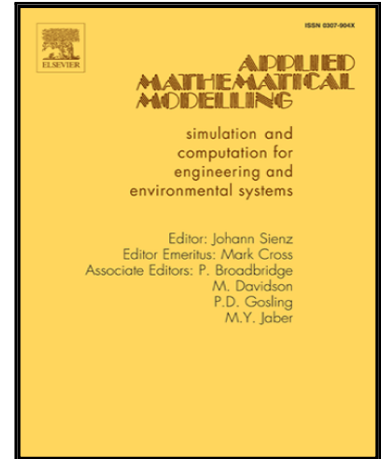


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Magnetohydrodynamic stationary and oscillatory convective stability in a mushy layer during binary alloy solidification

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Highlights

- Mushy layer growth during solidification of a bottom cooled binary alloy.
- Magnetohydrodynamic stationary and oscillatory convective stability in the mushy layer
- Results are presented for various values of mush Hartmann numbers in the range,
 $0 \leq Ha_m \leq 50$.
- The critical Rayleigh number for stationary convection shows a linear relationship with increasing Ha_m .
- Increasing magnetic strength shows reduction in wavenumber and in the number of rolls in the mushy layer.

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