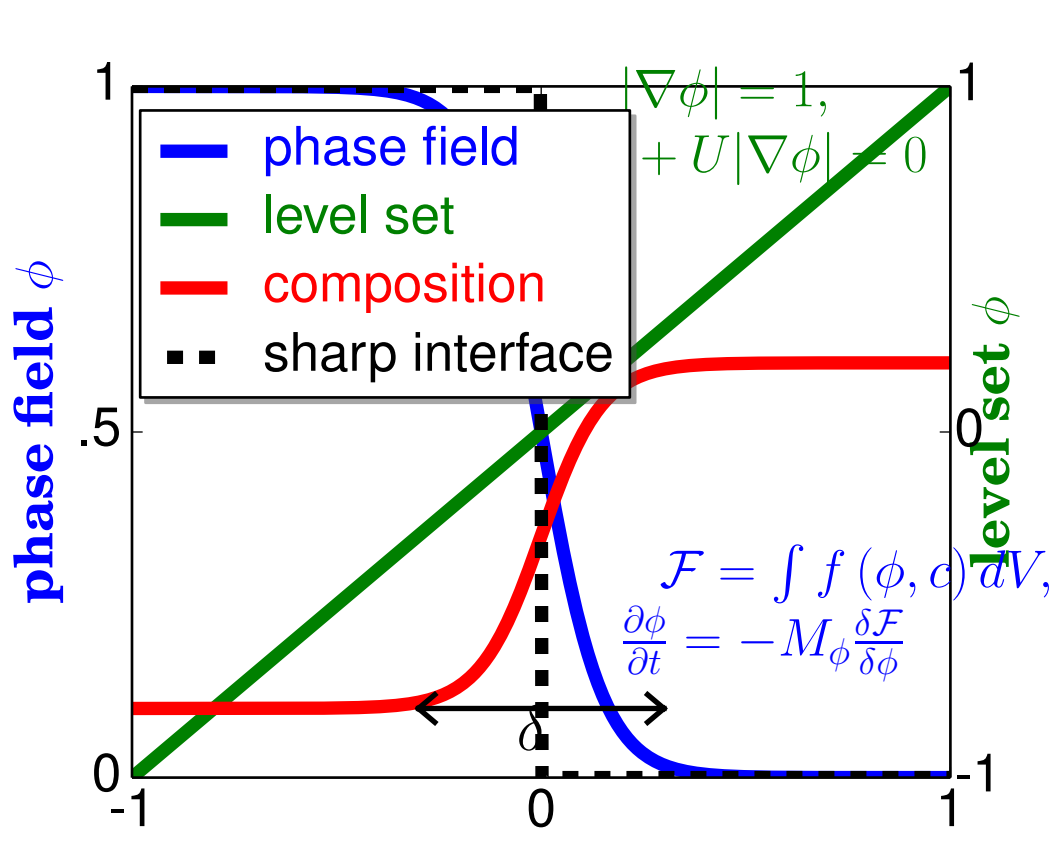
phase field
level set
composition
sharp interface
$|\nabla\phi| = 1,$
$+ U|\nabla\phi| = 0$
$\mathcal{F} = \int f(\phi, c)\, dV,$
$\frac{\partial\phi}{\partial t} = -M_\phi \frac{\delta\mathcal{F}}{\delta\phi}$
δ
phase field ϕ
level set ϕ
1
.5
0
-1
0
1