

Time Since Drilling Started

Hole Radius

Antifreeze Pump

Drill

Melting

Freezing

Dissolution

Slush

Constitutional Supercooling

$T_f(C)$

$\sqrt{\alpha t}$

\sqrt{Dt}

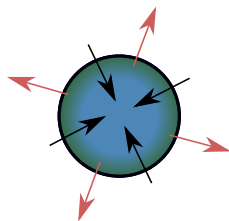
④

④

Energy to Bulk Ice

Refreeze

Refreezing

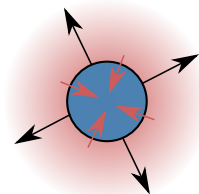


③

Energy from Annular Zone

Dissolve Out

Dissolving

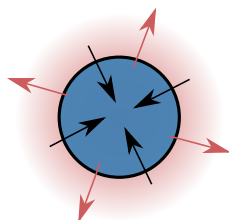


②

Energy to Annular Zone

Freeze Back

Freezing

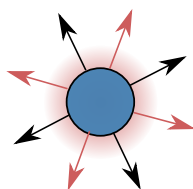


①

Energy to Annular Zone

Melt Out

Melting



0

R^*

2

4

0.0

-0.5

-1.0

-1.5

T^*