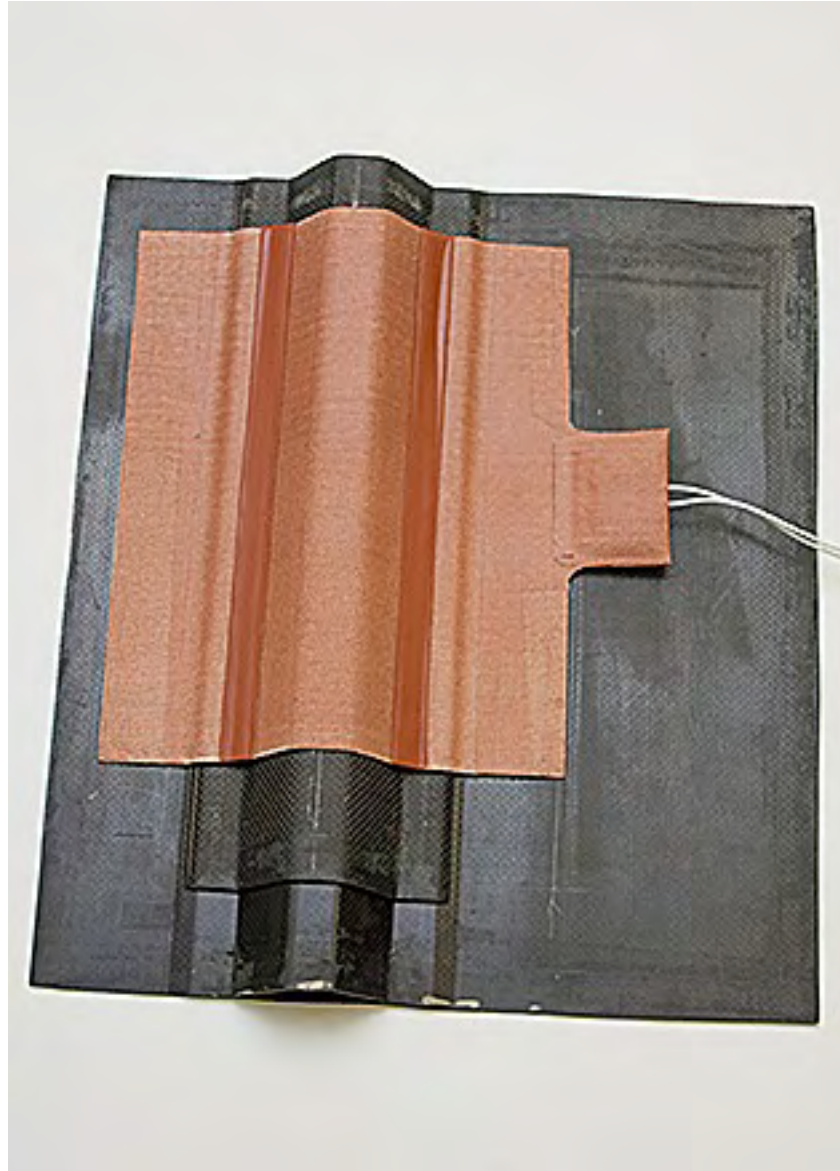


Precise Control of Cure Processes During Repair

A. F. Emery, UW

Eric Casterline, HEATCON





What are we likely to know?

Structural shape

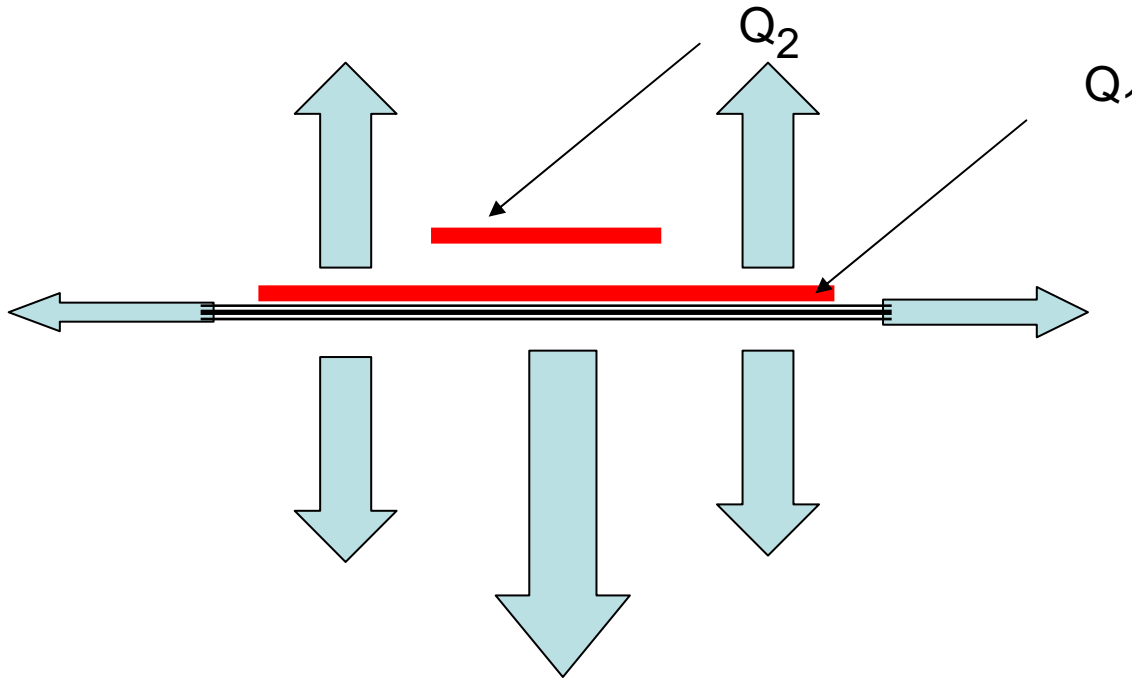
thermal properties of materials

ambient conditions

What are we unlikely to know?

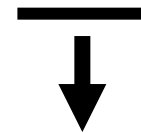
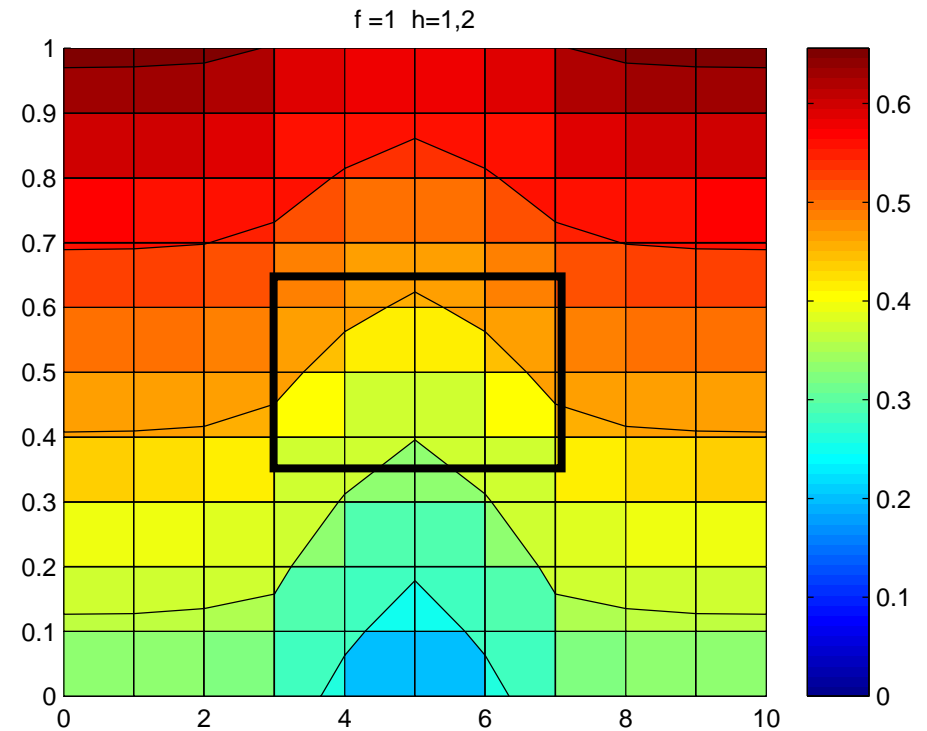
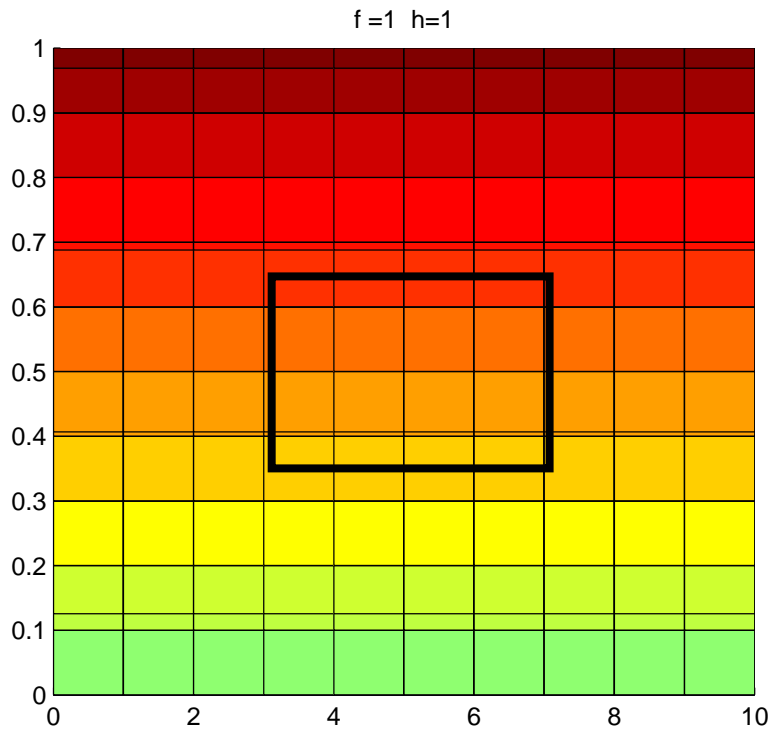
Details of the heat transfer

Schematic of Heat Loss

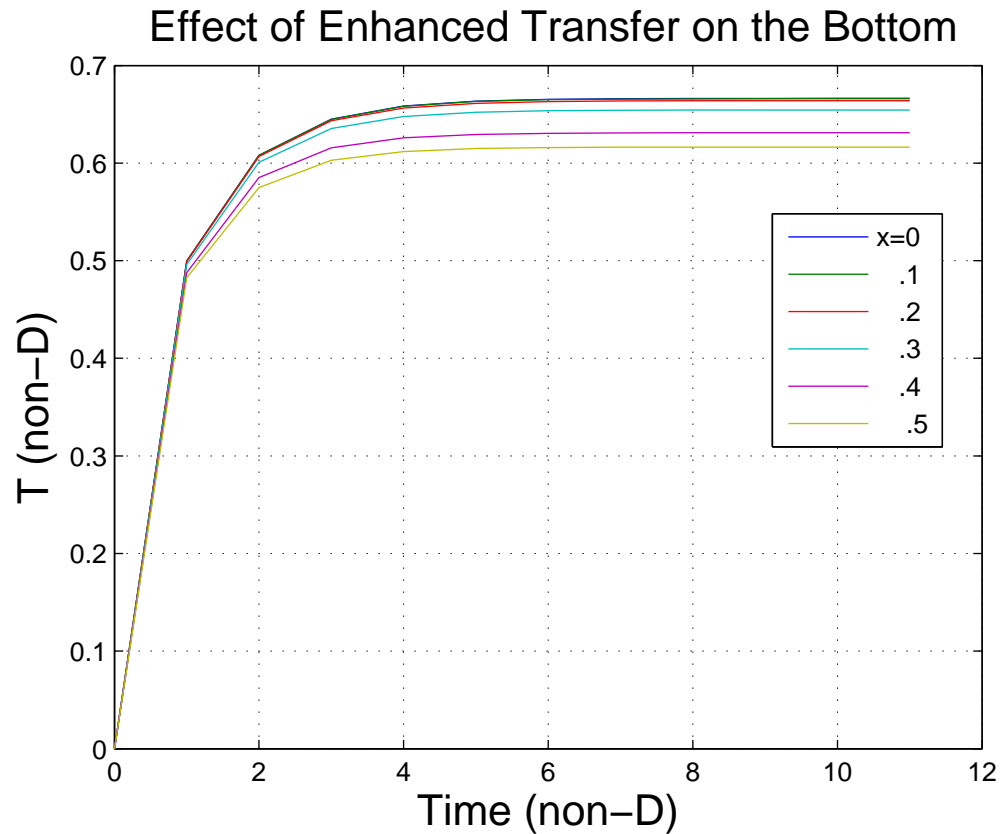


What are Q_1 and Q_2

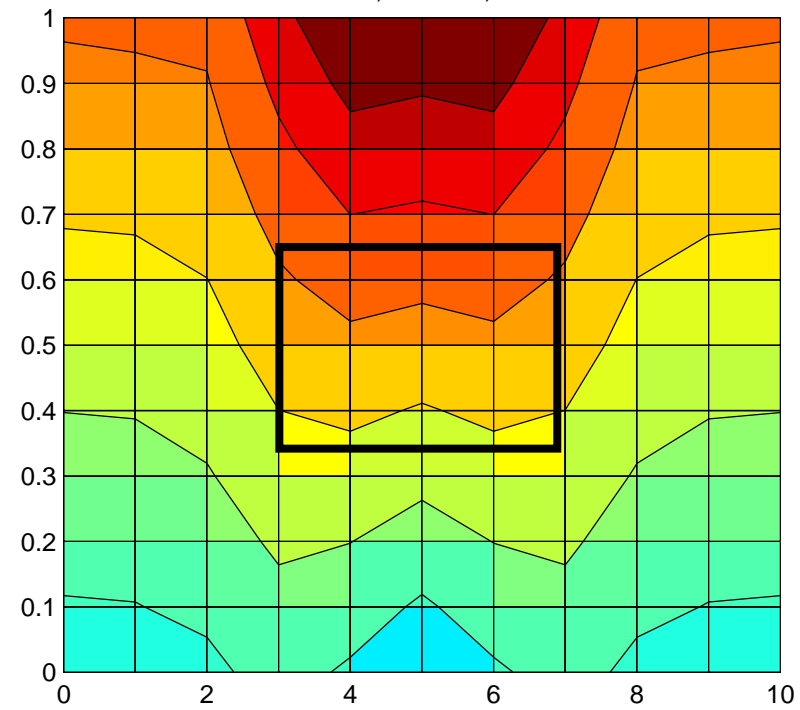
Effect of Increased Heat Transfer



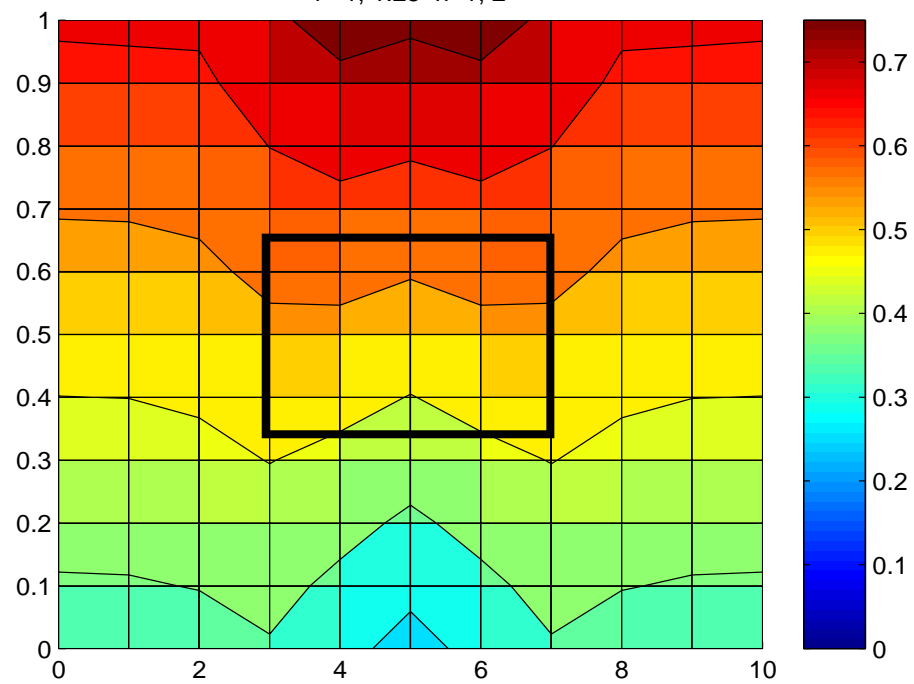
Estimating Effect of Increased Heat Transfer using Inverse Heat Transfer



f = 1, 1.5 h = 1, 2



f = 1, 1.25 h = 1, 2



Goals

Combine an Inverse Heat Transfer techniques,
coupled with Bayesian Modeling,

with

Optimization techniques to predict a spatial distribution of Q

Recognizing the constraints imposed by finite size heaters, etc.