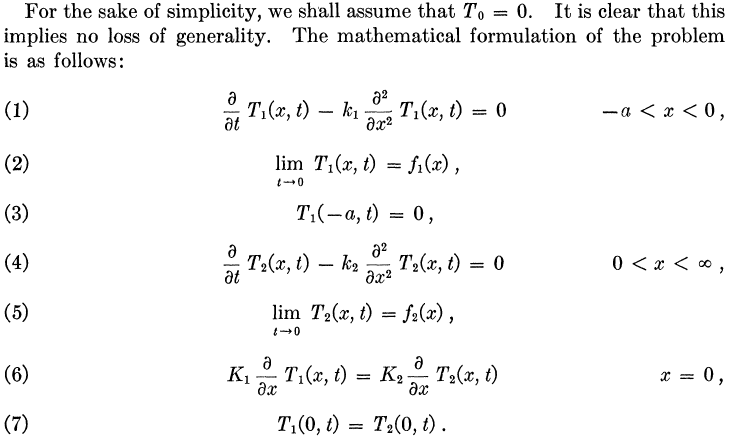
Notes on Encoding the problem for IIVP:

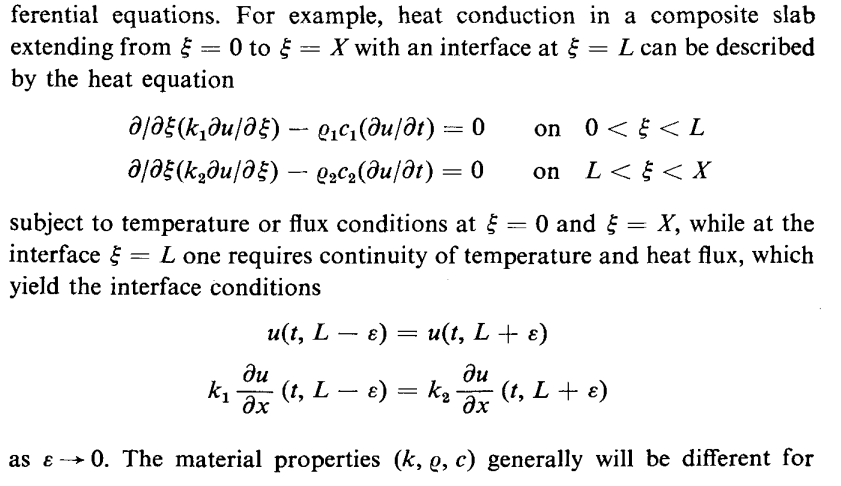
Summary:

Many slabs joined together

## Composite Slabs lowan



## Chapter 3 Interface problem (ALSO has linear algebra)



## Conduction of Heat in Solids

Composite problems

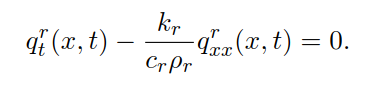
Not much detail

## Heat conduction Textbook

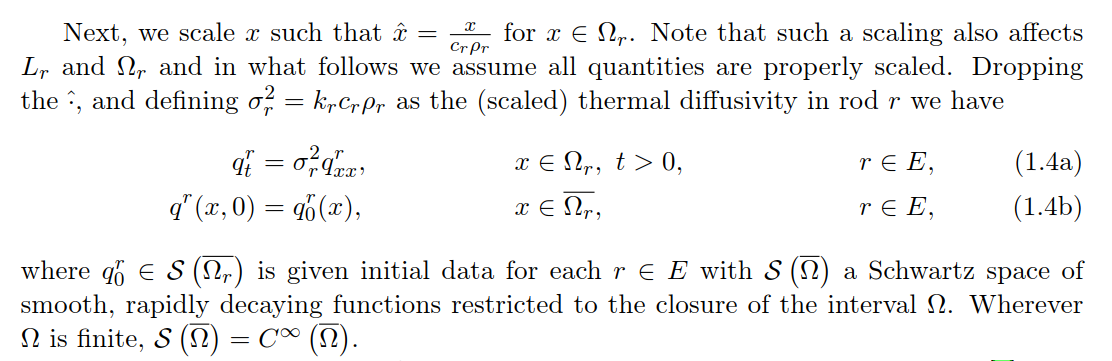
Moving interface problem

Need to consider?

## Heat equation on a network



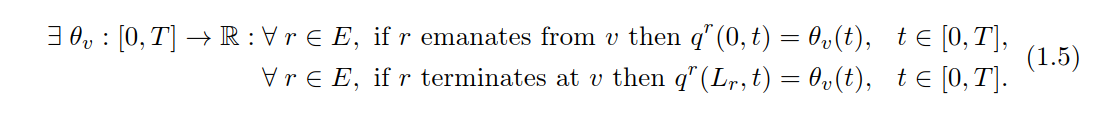
Scales the x?



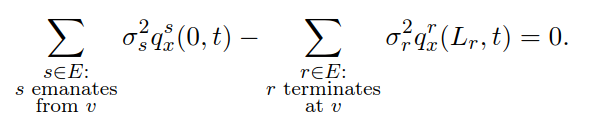
Assumes perfect thermal contact

Conditions

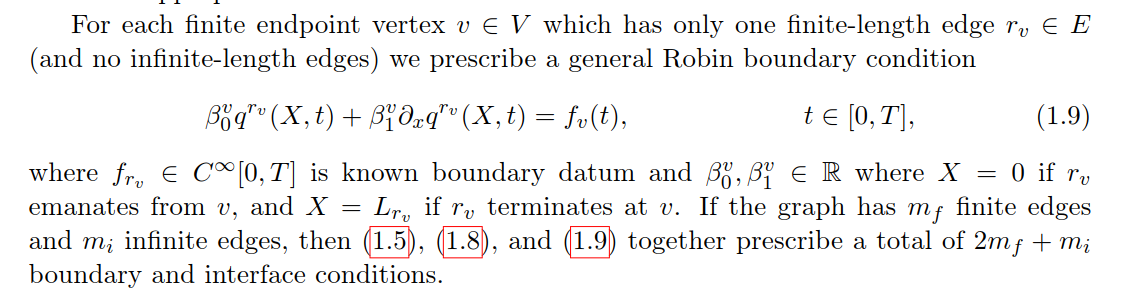
Temperature is the same on the left as on the right



The first derivative is also the same on the left as on the right

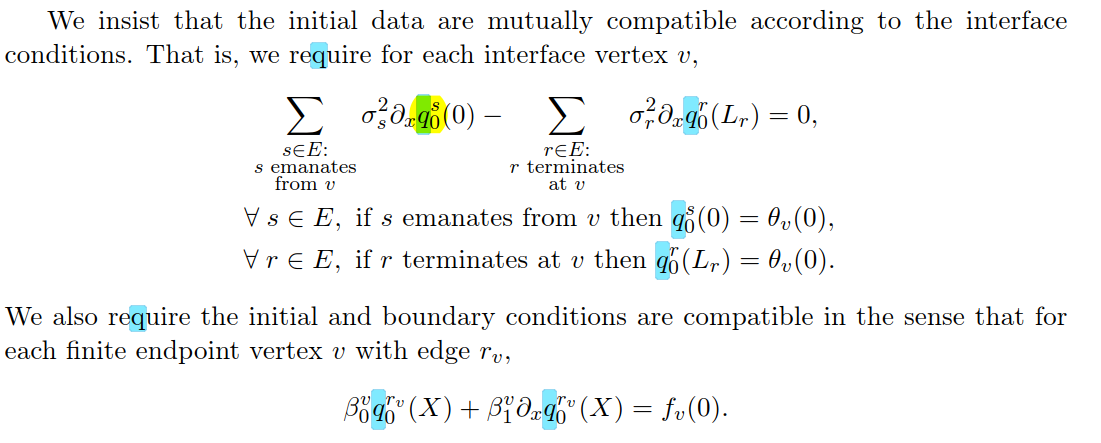


For vertexes with only one edge (so at the ends of the network), we have the conditions



Total 2mf + mi conditions

Also, the interface and boundary conditions have to be compatible with initial conditions



## Initial to interface Maps for the Heat equation in Composite

Newest paper?

Initial to interface map

Also assumes continuity

Considers infinite domain with finite interfaces

Also finite domain with finite interfaces

## Interface Problems for Dispersive equations

Dispersive equations, like the Schrodinger equation

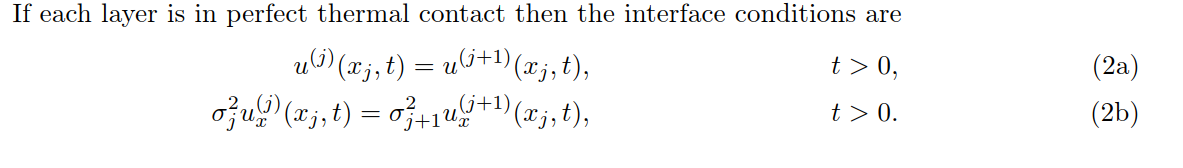
Deals more with waves than heat

Still has similar conditions to the perfect thermal contact condition

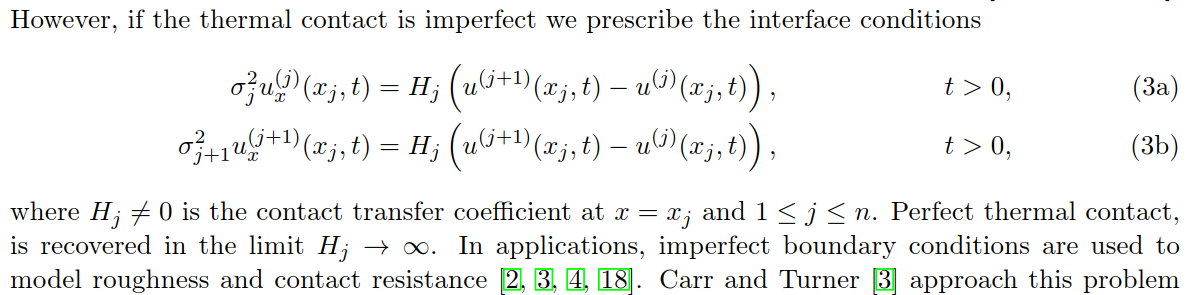
But lets not pay too much attention to this…

## Multilayer diﬀusion in a composite medium with imperfect contact

Considers imperfect contact where instead of



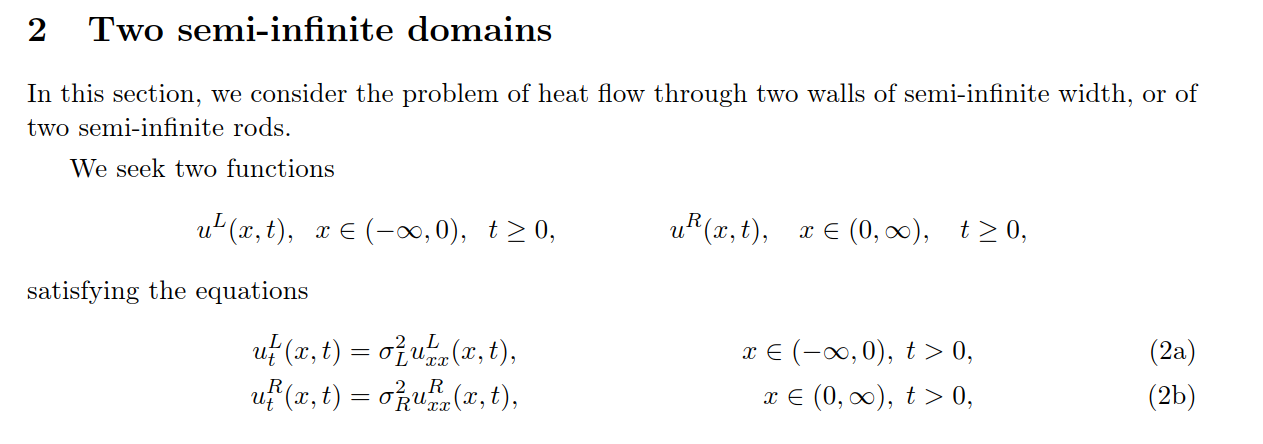
We have

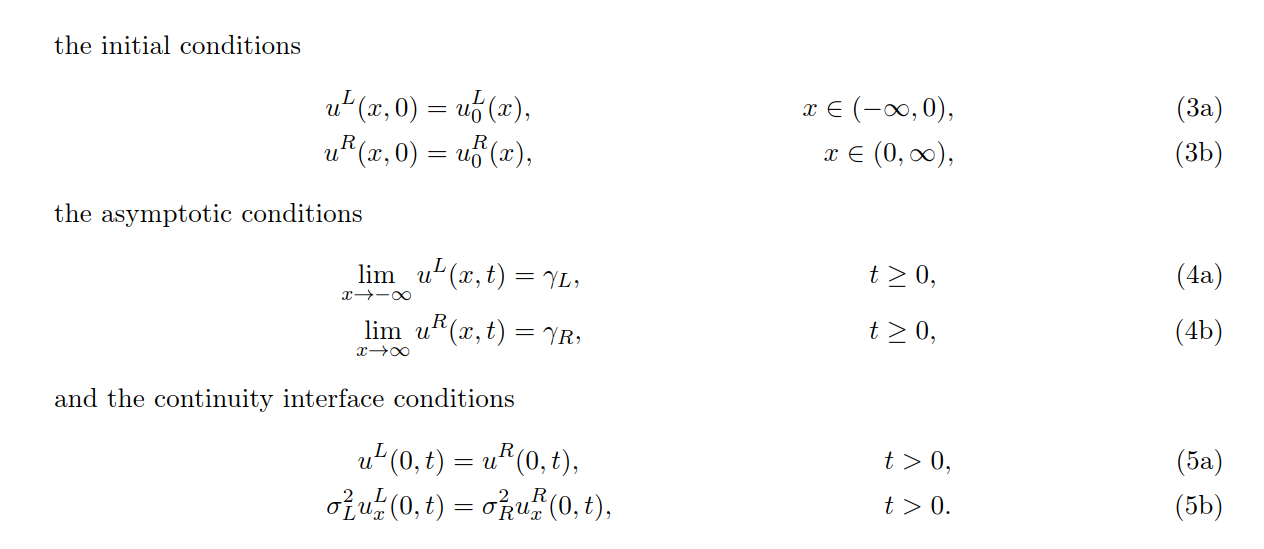


## Non-steady state heat conduction in composite walls

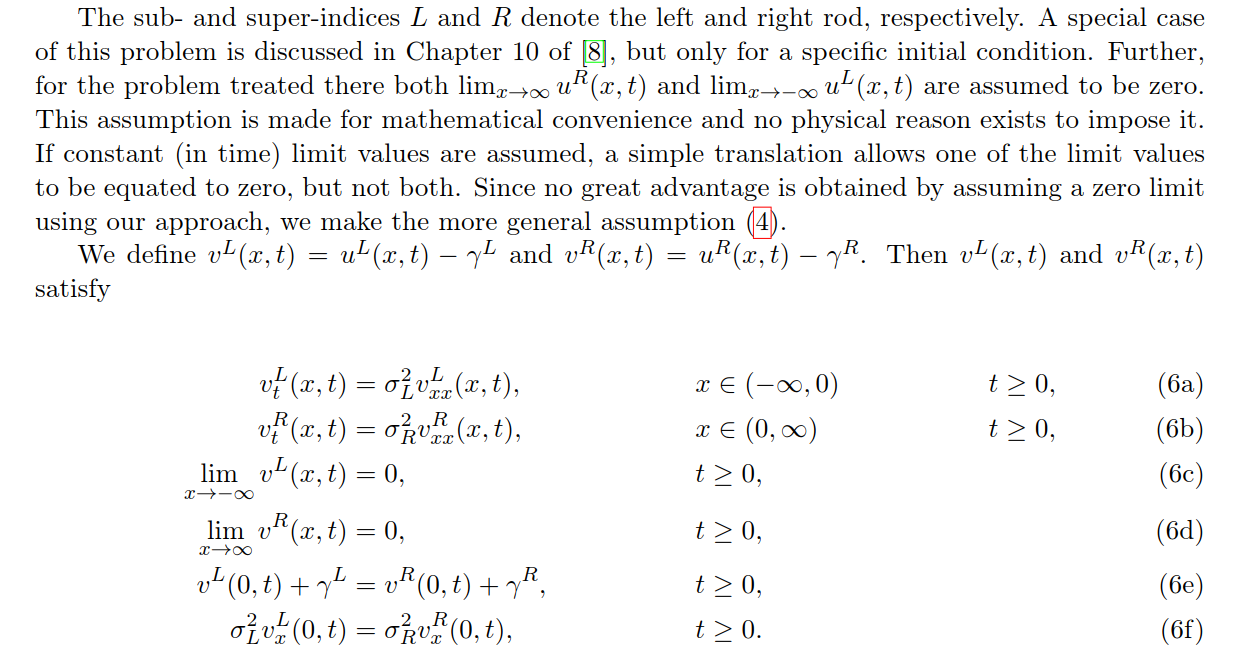
One of the more fundamental papers

Does not really generalize (has two and three domains only)

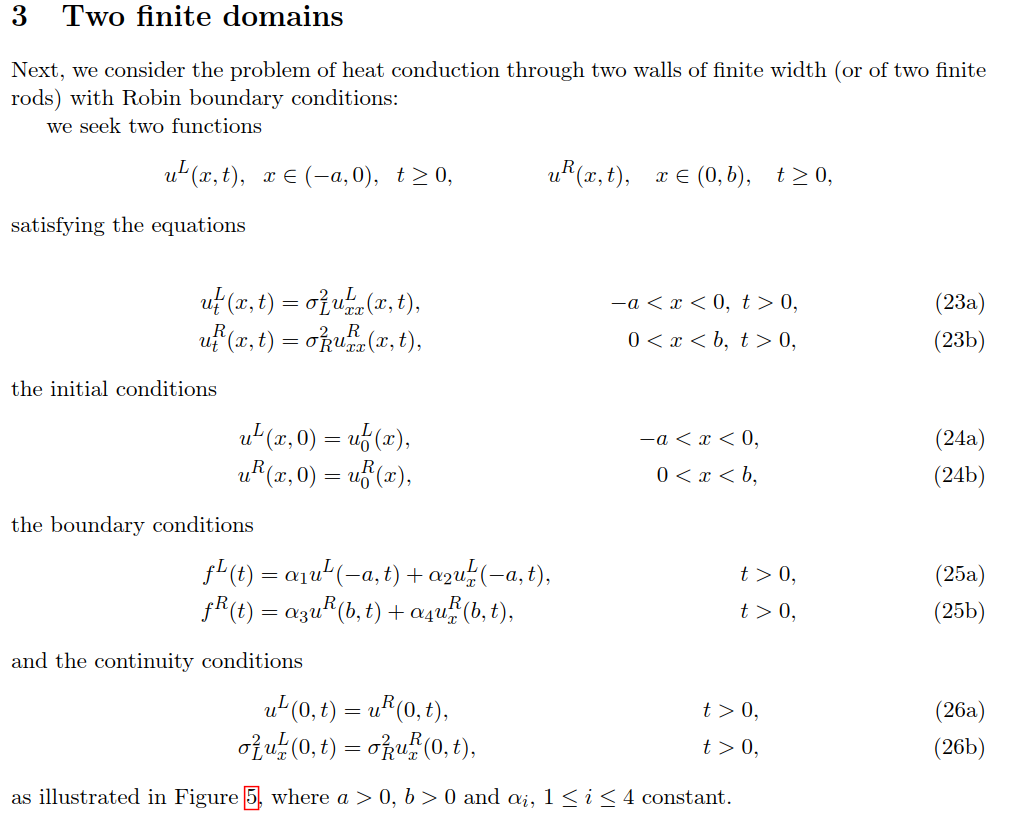




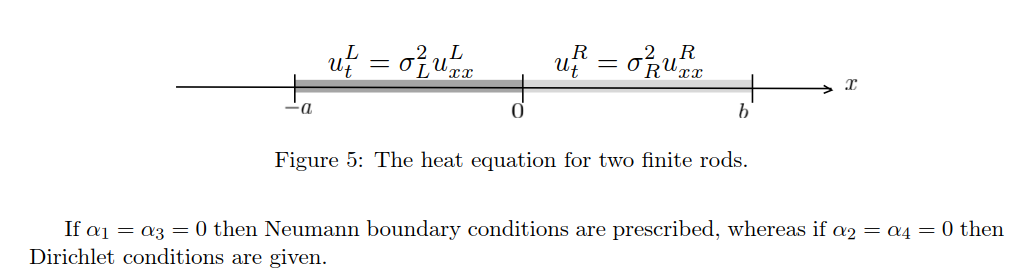
Has asymptotic conditions, which we can remove?



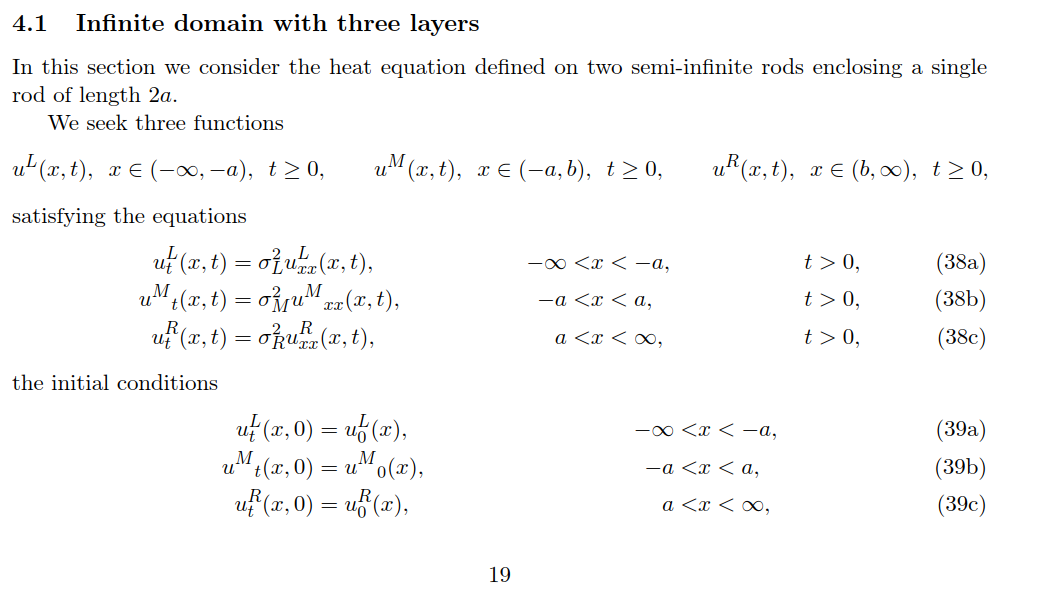
For finite walls:

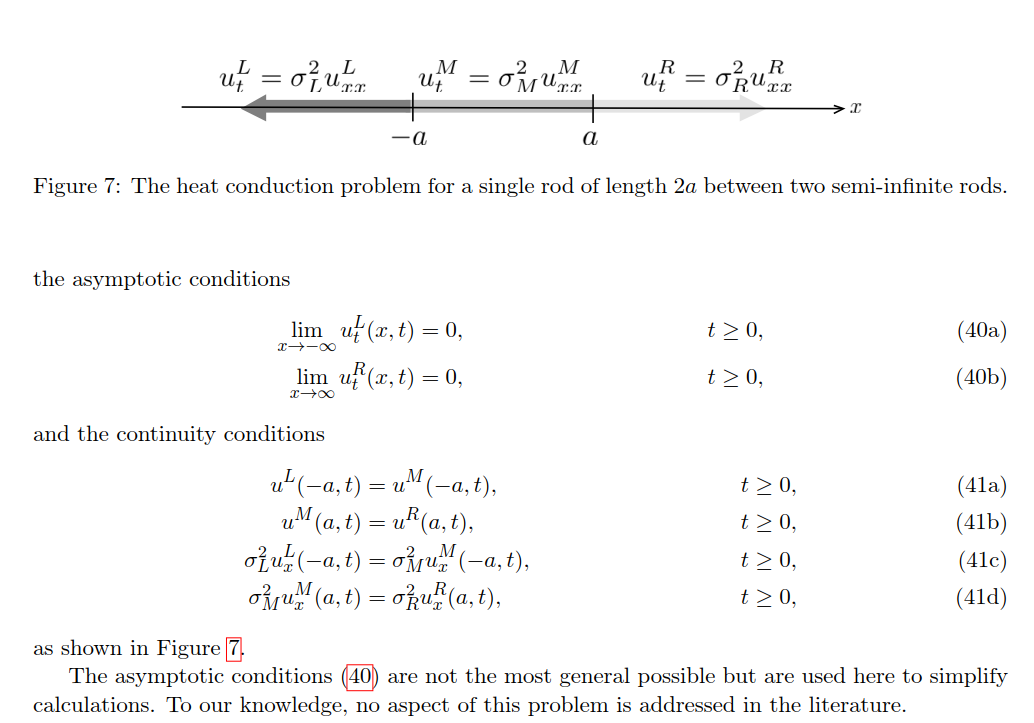


Robin conditions prescribe both Neumann and Dirichlet

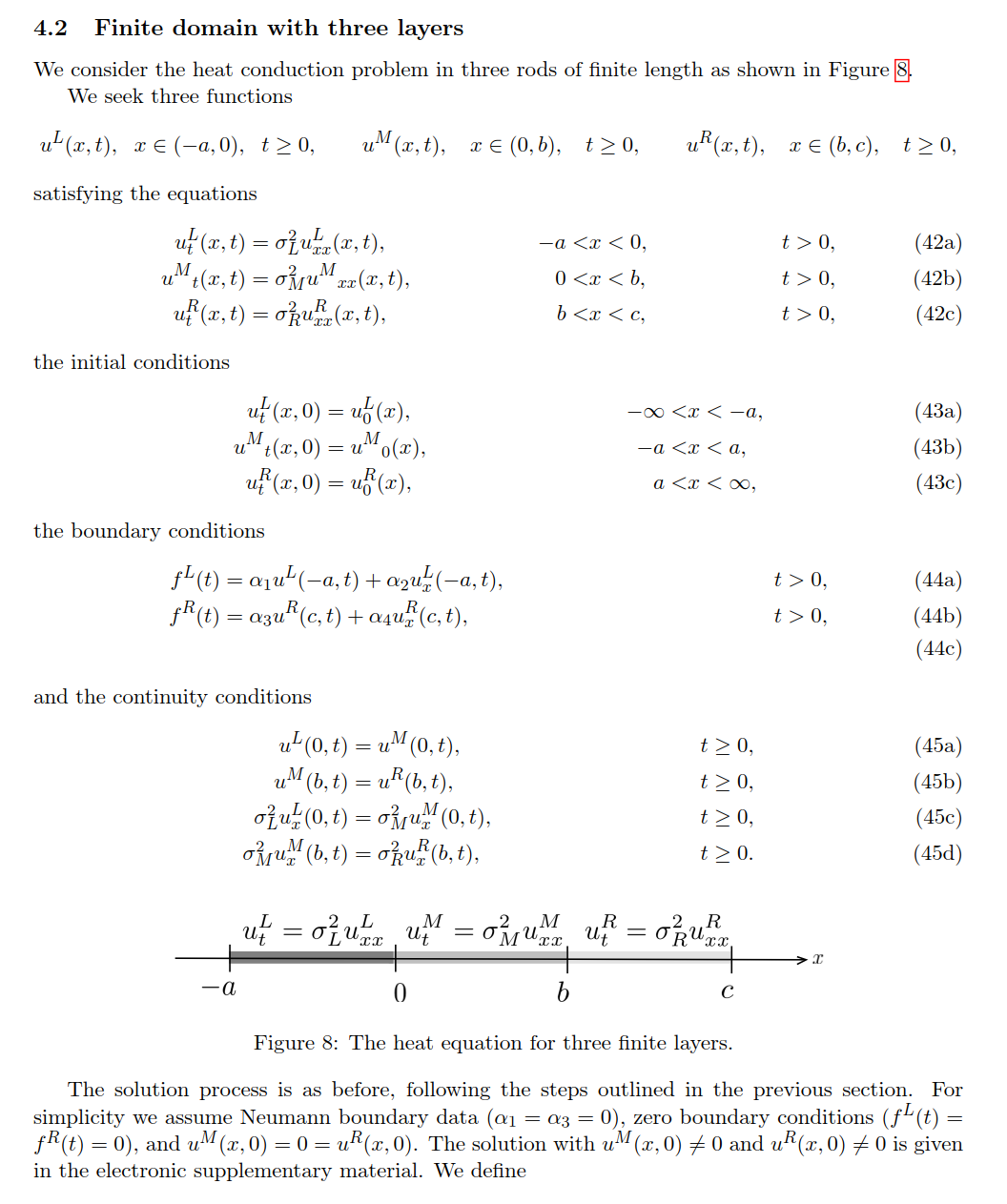


Infinite Domain with 3 layers



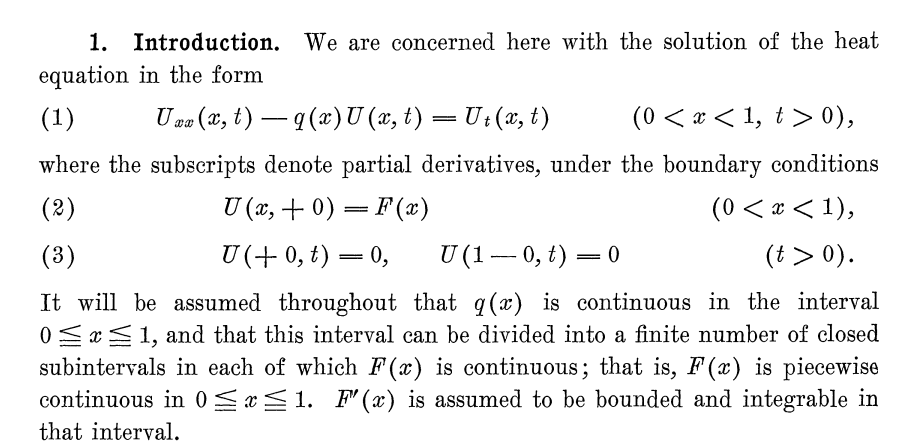


Finite domain with 3 layers



## On the Problem of Temperatures in a Non-Homogeneous Bar with Discontinuous Initial Temperatures Churchill

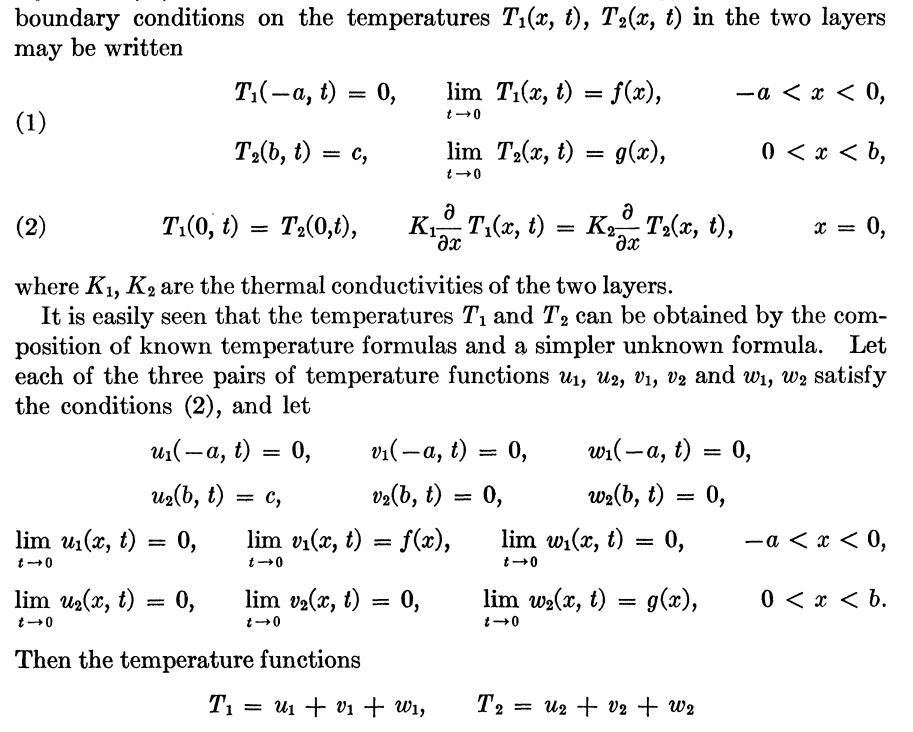
Different problem



## TEMPERATURE DISTRIBUTION IN A SLAB OF TWO LAYERS Churchill

Classical way to solve the problem assuming:

Two slabs, finite thickness, left limit is 0 and right limit is c, perfect thermal contact



## The Linear KdV Equation with an Interface

Extend methods to higher order than two.

