



MITx CSE.0002x

Introduction to Computational Science and Engineering

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10.1.3 A scalar (single state) example: Heating a cabin

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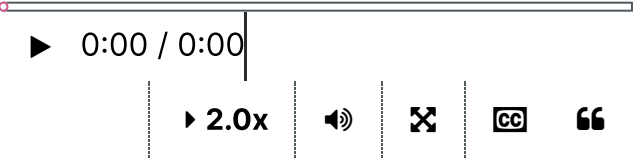
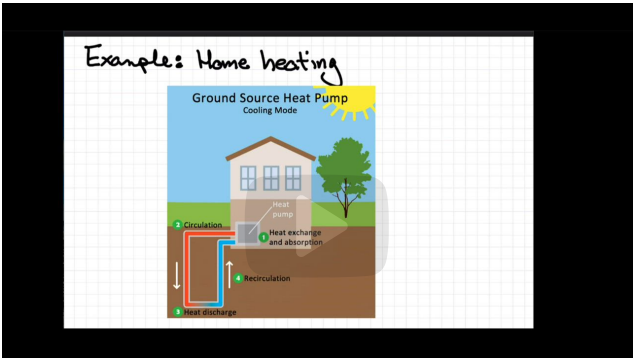
M02.4

M02.8

In these lectures on linear systems, we will use heating and cooling of a building as an example. To begin, in this video we will show how to derive the model for a single room cabin with a wood stove. The result is a single scalar $M=1$ equation, and so A is a scalar. Then, using our current IVP library, we will explore the temperature behavior of the cabin in a couple different situations.

The Python codes discussed in this video are available in the following [zip file](#).

Video on heating a one-room cabin



[Start of transcript.](#)
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PROFESSOR:
We're going to use a home or a building heating example through much of our discussion of linear systems.
So here's sort of the scenario we

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