

Compare models from HW 1

- Each explain one of your models to rest of table
- Discuss at tables
 - Selection of state variables,
 - Input and output for models
 - Equations, if any → do they represent the dynamic behavior?
 - What is the expected behavior, and how does this relate to either e^x or a^k ?

Create RC circuit dynamic model

- Review RL circuit model
- For the RC circuit, determine
 - Input and output
 - Circuit diagram, circuit topology
 - Expected behavior, in terms of e^x or a^k
- Follow the steps in the flow chart from Brogan, and identify
 - Dynamic element equations
 - Interconnecting equations

Create mass-damper dynamic model

- Pattern on the RC and RL circuit models
- Draw a picture of the system
- Identify the input, output
- Predict the expected behavior, and comment on in terms of e^x or a^k
- Identify the element and the interconnecting equation

- * TIME CONSTANTS *
 - Identify/define the time constant for each of these three models, the RC and RL circuits and the mass-damper model
 - Explain how they are all related to each other
- * MODIFYING BEHAVIOR *
 - How could you modify the behavior of each of these systems?
 - What is the behavior and in what ways would a ‘different’ behavior appear, and then... how would you go about achieving this different behavior?

Block Diagrams

- Chain letter model
 - Compare the block diagram to the model we developed in class
 - Identify ALL the elements of the model and the expected behavior
 - Write the dynamic equation, using the block diagram
- Sketch a block diagram for each of the other models
- Compare your diagram to the one provided, and write the dynamic equation from the block diagram provided
- Talk about the feedback that is shown in each diagram
- Talk about the delay and the integrator blocks

Create 2nd order dynamic model

- Start creating an RLC series or parallel circuit model
- Start creating a mass-spring-damper model