Mixing Liquids Model

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Abstract

This project examines the mixing dynamics of saltwater in two linked tanks, studying how external inflows, outflows, and transfers between tanks affect salt concentrations over time. A system of first-order differential equations was created and solved through numerical methods in MATLAB. The model's validity was evaluated via different scenarios, sensitivity analyses, and transient behaviors monitor. Findings show that equilibrium levels are affected by flow dynamics and input concentrations, highlighting the model's relevance to realistic and practical systems.

Contents