

M. J. B. Hauser, D. Lebender, F. W. Schneider:
Stirring Sense Discriminates between Stationary and Oscillatory States
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Abstract:

The bifurcation behavior of the minimal bromate system ($\text{BrO}_3^-/\text{Br}^-/\text{Ce}^{3+}/\text{H}_2\text{SO}_4$) in a flow reactor shows a wider oscillatory region if the symmetric stirrer rotates in one direction than if the stirring direction is reversed. Thus, at appropriate flow rates, a reversal in the stirring direction causes a transition between an oscillatory and a steady state. This phenomenon can be explained by a change in the mixing order of the feedstreams.