

# **Dynamics of exotic front solutions in reaction-diffusion systems**

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## **1. Abstract**

We give an overview of the complicated dynamics exhibited by front solutions in reaction-diffusion systems. Along the example of an Allen-Cahn-type multi-component system we show how the dynamics of a front path can be described by a set of ODEs, which - under certain conditions - can even support chaotic motion emerging from nil-potent singularities. We also touch on the dynamics of front solutions with heterogeneous tails that arise for reaction-diffusion systems with spatially varying coefficients. Of particular interest are such traveling fronts which cannot be captured via a co-moving frame.