

Phase Diagrams for Electronic Circuits and Lasers

what is interesting to measure, where, and how

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We review recent advances concerning mixed-mode oscillations, MMOs, also known as alternating periodic-chaotic (APC) sequences of oscillations. Although MMOs are known for 30 years, only recently it was realized that they exist in several different types, requiring distinct mathematical formulations for their description. We address the organization of MMOs in control parameter space of simple system, pointing out some experimental scenarios where to probe recent theoretical findings. In particular, we show that the familiar Farey trees are in fact just sub-trees of a much more general organization: Stern-Brocot trees, as illustrated in the Figure.

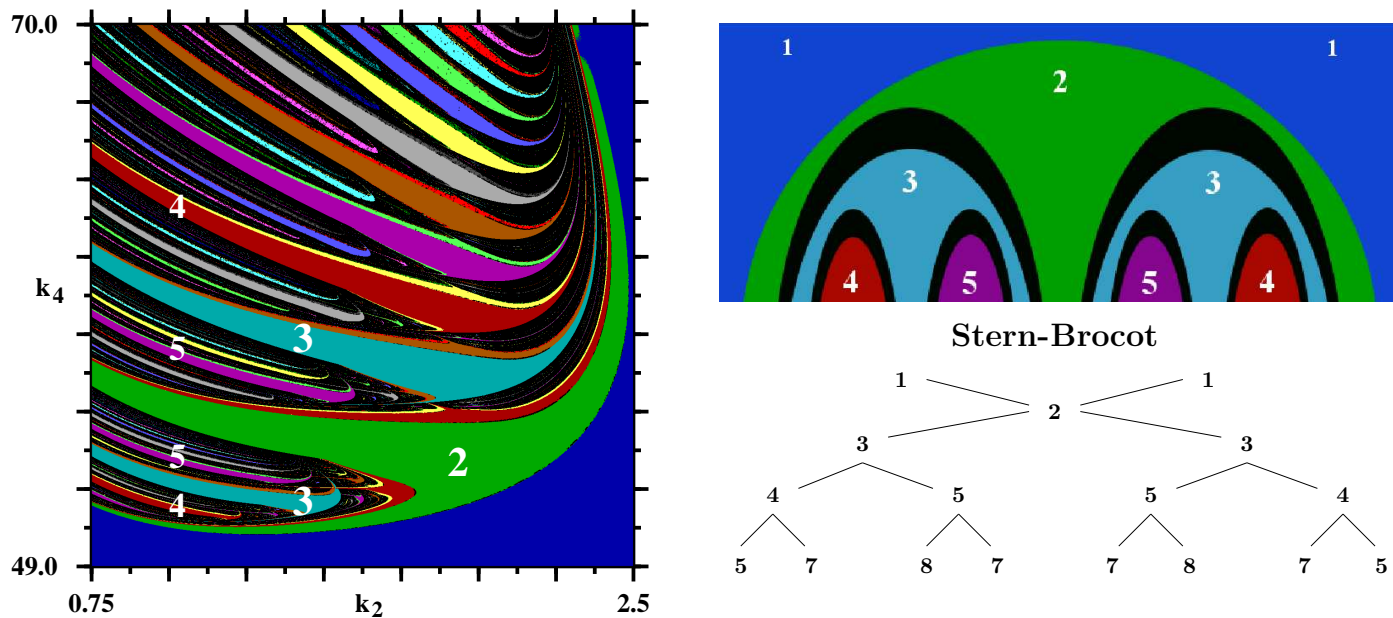


Figure 1 Stern-Brocot tree for the Belousov-Zhabotinsky reaction. J.G. Freire and J.A.C. Gallas, Phys. Chem. Chem. Phys. **13**, 12191 (2011). Numbers represent number of spikes in periodic oscillations; k_2 and k_4 are reaction parameters.