

# Asymptotic dynamics of spiral and scroll waves

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Critical adjoint eigenfunctions of spiral waves ("response functions") are essentially localized around near the core of the spiral. Due to this property, spiral waves, although being non-localised solutions, subjected to various symmetry-breaking small perturbations behave like point-like "particles", obeying "Aristotelian" laws of motion, where spiral velocity is proportional to the sum of applied forces. Correspondingly, the three-dimensional extensions of spiral waves, known as scroll waves, behave like "string"-like objects. Recently it has become possible to calculate response functions numerically with good precision. This offers wide perspectives in using the asymptotic dynamics to explain and predict behaviour of spiral and scroll waves and ways of their control. In this talk will survey some recent results in that direction.