

# Revealing stickiness in a field line map using recurrence analysis

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In fusion plasmas, the stickiness effect manifests as the prolonged trapping of magnetic field lines in a specific region for many toroidal turns, significantly impacting plasma transport. We utilize a concept based on recurrence plots, which unveils the presence of a hierarchical structure of islands around islands where chaotic orbits become trapped. This analysis is performed on a Hamiltonian system describing the magnetic field lines within a Tokamak. Furthermore, we can differentiate between various levels of this structure and calculate the cumulative distribution of trapping times

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