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C^2-robustly transitive diffeomorphisms on surfaces with boundary

Robustly transitive maps can not be ignored in any global picture of dynamical systems. Besides being a property that cannot be destroyed by small perturbations, the maps that have it often exhibit a chaotic dynamical behavior. This property is widely studied in the C^1-topology, and it is related to hyperbolicity and transversality properties. Few things are known in the C^2-topology. In this talk we shall exhibit a class of smooth diffeomorphisms on a compact surface with boundary which are robustly transitive in the C^2-topology but not in the C^1-topology.