On Bonatti-Diaz cycles

Abstract:

We consider a partially-hyperbolic system with a heteroclinic cycle which contains a pair of saddles with different dimensions of the unstable manifold. We show that an arbitrary small perturbation of any such system creates a Bonatti-Diaz blender that leads to the emergence of persistent heterodimensional cycles. We also show that C1-generic, C2-generic, and C3-generic properties of systems in this class are different, while the higher order derivatives seem to have no effect on the generic dynamics.