

1056-03-72

Chris Miller* (miller@math.ohio-state.edu), Ohio State University, Department of Mathematics, 231 West 18th Avenue, Columbus, OH 43210. *Expansions of o-minimal structures by trajectories of definable vector fields.*

An expansion of the real field is said to be o-minimal if every definable set has finitely many connected components. Such structures are a natural setting for studying "tame" objects of real analytic geometry such as nonoscillatory trajectories of real analytic planar vector fields. More generally, o-minimality is preserved under expanding by nonoscillatory trajectories of definable planar vector fields. But what happens when o-minimality is not preserved? We see in some cases the best behavior that we could reasonably hope for, while in some others the worst possible, and we do not know at present of any other outcomes. I will make all this precise in a survey of the current state of the art. (Received September 14, 2009)