INVARIANT VARIETIES OF DISCONTINUOUS VECTOR FIELDS

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We study the geometric qualitative behaviour of a class of discontinuous vector fields in four dimensions around typical singularities. We are mainly interested in giving the conditions under which there exist one-parameter families of periodic orbits (a result that can be seen as one analogous to the Lyapunov centre theorem). The focus is on certain discontinuous systems having some symmetric properties. We also present an algorithm which detects and computes periodic orbits.

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