STRUCTURAL STABILITY IN A CLASS OF REFRACTIVE PARTIALLY INTEGRABLE VECTOR FIELDS

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In this talk we will discuss some qualitative and geometric aspects of non-smooth dynamical systems theory. Our main goal is to study stability problems inside the class of 3-dimensional refractive piecewise smooth vector fields. Our concern is to study refractive vector fields that admit a first integral that leaves invariant any sphere centered at the origin. Global stability conditions on generic one-parameter families of refractive piecewise smooth vector fields on a two-dimensional sphere are presented and used to prove our main result, which establishes necessary conditions for the structural stability inside that class.

Joint work with: Ana Livia Rodero and Marco A. Teixeira.