ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 34B
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The Fučik Spectrum and its Generalization for Asymptotically Positively Homogeneous Systmes of Differential Equations
In this talk, we will propose how to define the Fučik spectrum for positively homogeneous systems of differential equations. The Property P, a generalization of the non-Fučik spectrum to non-autonomous differential systems will also be given in the most general setting. In order to obatin the non-resonance results from the Fučik spectrum and Property P, a quantative result for positively homogeneous perturbations of the identity in Banach spaces is proved. Such a result is a generalization of some spectrum properties for linear, completely continuous operators. Using this result, the usual non-uniform non-resonance results will be unified into a general framework and be improved significiantly.