McMaster University   University of Toronto   University of Waterloo

THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

EXPOSITORY SEMINAR SERIES ON DYNAMICAL SYSTEMS

SPEAKER:

> ### VICTOR G. LeBLANC
> ### University of Waterloo

On the Topic:

"Equivariant Normal Forms for the n:1 Hopf Bifurcation"

In this talk, we will use the methods of Elphick et al to derive SO (2)- equivariant normal forms for the Hopf-Hopf mode interaction with $n : 1$ resonance. We will then introduce coordinates such that this normal form decouples into vector fields which are tangent and transverse to the action of SO (2). The amplitude equations have a residual $Z_2 \oplus Z_n$ symmetry, which can be exploited to prove the existence of the classical Hopf solution, using the equivariant branching lemma of Vanderbauwhede and Cicogna.

Thursday, October 29, 1992 at 1:30 - 2:30 pm, room 3018

at

The Fields Institute

In the context of the 1992-93 Program in Dynamical Systems and Bifurcation Theory, this seminar series will be primarily offered for graduate students and postdoctoral fellows; however all interested participants are welcome to attend and/or offer to give a talk. The talks will be expository in style and require minimal prerequisites in order to be accessible to a general mathematical audience. This is an ongoing series each week through December 3, 1992, except Oct 15 and 22. Anyone interested in giving a talk, please contact Ali Lari-Lavassani: lavassan@fields.uwaterloo.ca. (There will be no talks October 15 or 22.)