Wojciech Kryszewski
Technical University of Łódź, Poland
Nicolaus Copernicus University in Toruń, Poland

Bifurcation at infinity for elliptic problems on $\mathbb{R}^N$

In the talk the asymptotic bifurcation of solutions to a parameterized stationary semilinear Schrödinger equation involving a potential of the Kato-Rellich type will be discussed. It will be shown that the bifurcation from infinity occurs if the parameter is an eigenvalue of the hamiltonian lying below the asymptotic bottom of the bounded part of the potential. Thus the bifurcating solution are related to bound states of the corresponding Schrödinger equation. The argument relies on the careful study of the properties of the underlying operator and on the use of the (generalized) Conley index due to Rybakowski and resonance assumptions of the Landesman-Lazer or sign-condition type. This is a research joint with A. Ćwiszewski.