

Meeting: 998, Houston, Texas, SS 4A, Special Session on Nonlinear Analysis

998-35-223 **Thomas Bartsch**, Giessen, Germany, **Tobias Weth*** (weth@math.umn.edu), Minneapolis, MN, and **Michel Willem**, Louvain-La-Neuve, Belgium. *Partial symmetry of nodal solutions to some variational problems.*

We study symmetry properties of several radially symmetric minimization problems. The minimizers which we obtain are sign changing solutions of superlinear elliptic problems, or eigenfunctions of weighted asymmetric eigenvalue problems, or they lie on the first curve in the Fucik spectrum. In all instances we prove that the minimizers are foliated Schwarz symmetric. We give examples showing that the minimizers are in general not radially symmetric. The basic tool which we use is polarization, a two point rearrangement which is useful especially for sign changing functions. (Received February 27, 2004)