NORTHERN ARIZONA UNIVERSITY

Department of Mathematics and Statistics

COLLOQUIUM
Tuesday, April 14th, 2015
4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments at 3:45)

Michael McHenry
NAU

M.S. Thesis Research Talk

The Fučik Spectrum of the Laplacian Operator Bifurcation Analysis and Numerical Approximations

Abstract: This talk concerns the Fučik spectrum as a generalization of the idea of eigenvalues. We will first demonstrate by finding the spectrum of a 2x2 matrix, and then discuss numerical techniques that we can use to find the spectrum of larger matrices. The application we have for this is the negative second difference matrix approximating the Laplacian. If time permits, we will discuss the implementation and numerical results for semilinear elliptic boundary value problems with Fučik spectrum terms on the unit interval (0,1) and unit square (0,1)x(0,1).

Algebra Combinatorics Geometry and Topology (ACGT) Seminar will meet Tuesday April 14th, 12:45 – 2:00 pm, AMB 164.

Applied Math Seminar (AMS) will meet Thursday April 16th, 12:45 – 1:45pm, AMB 164.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) will meet Friday April 17th, 3:00 – 4:00pm, AMB 164.