



Department of Mathematics and Statistics

COLLOQUIUM

Tuesday, September 20th, 2015

4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments at 3:45)

Dr. John Neuberger
NAU

A nonlinear deflation algorithm for semilinear elliptic boundary value problems.

Abstract: We present a nonlinear deflation algorithm for approximating a sequence of solutions of increasing augmented Morse index to sublinear and superlinear elliptic boundary value problems. The algorithm is based on three minimax conjectures, whereby the solutions are produced as the minimums of the action functional on a sequence of sets. Membership to the sets is obtained by maximizing the functional with respect to finitely many eigenfunction directions. We apply the nonlinear deflation algorithm to several ODE and PDE examples, and conclude with some thoughts pertaining to the possibility of proof of the conjectures.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets every Tuesday, 12:45 – 1:45 pm, AMB 164.

Applied Math Seminar (AMS) meets every Thursday, 12:45 – 1:45 pm, AMB 164, as announced.

Shafiu Jibrin will speak again this Thursday.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm, AMB 164.