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Mauricio Alexander Rivas* (rivasma@wfu.edu). *Linear Elliptic Eigenproblems and Observing Lyapunov Exponents of Infinite-dimensional Dynamics.*

We analyze the set of critical points of a parametrized functional that arises in the study of linear elliptic eigenvalue problems that may include Robin or Steklov boundary conditions. The critical points are shown to be certain eigenfunctions while corresponding critical values are related to the associated eigenvalues. This is joint work with Professor Giles Auchmuty.

We then describe the extent to which Lyapunov exponents of infinite-dimensional dynamical systems, which may arise from evolution PDEs, follow by projecting the dynamics into \mathbb{R}^N using ‘typical’ nonlinear maps. This is joint work with Professor William Ott. (Received September 16, 2014)