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**Jonathan Gustafsson\*** (cjugustaf@nps.edu), Naval Postgraduate School, 1 University Circle, Herrmann Hall RM-413W, Monterey, CA 93943, and **Sivaguru S. Sritharan**. *Discrete and continuous spectra for the linearized Navier-Stokes equation in an exterior domain: A Computational simulation.*

Numerical approximations of the spectrum of the Oseen operator and the linearized Navier-Stokes operator for flow around a cylinder in two dimensions have been studied for Reynolds numbers between 2 and 40. By using a spectral method featuring basis functions covering the entire exterior domain, it is possible to obtain a numerical approximation to the continuous spectrum and the isolated eigenvalues (point spectrum). The numerical approximation of the spectra agrees with the previous rigorous results by Babenko (1982). That is a parabolic tongue containing the continuous spectra for the Oseen operator and a parabolic tongue containing the continuous spectrum plus a finite number of isolated eigenvalues for the linearized Navier–Stokes operator. The talk will describe spectral methods for unbounded domains and a way of approximating continuous spectrum of operators. By varying the so-called length parameter it is possible to classify an numerical calculated eigenvalue as part of the continuous spectrum or an isolated eigenvalue. (Received January 30, 2015)