1145-42-1499 **Francisco Marques Dos Santos Vieira** and **Benjamin Steinhurst***
(`bsteinhurst@mcdaniel.edu`), 2 College Hill, Math. CS Department, McDaniel College,
Westminster, MD 21157. *Spectral Segmentation on Nearly-Self-Similar Laakso Spaces.* Preliminary
report.

Laakso spaces serve as a convenient family of fractal spaces on which to study a the spectrum of a natural self-adjoint
Laplacian. This is because unlike most other fractals the spectrum of a natural Laplacian can be computing explicitly
including multiplicities. Laakso spaces are generated using a sequence of integers, when the sequence is periodic the
resulting space is self-similar. When the sequence is is a periodic sequence plus a "small" perturbation we say it is
"nearly-self-similar." In this talk we consider the spectral zeta function associated to the Laplacians on a sequence of
nearly-self-similar Laakso spaces. We will consider numerical data on the location and residues of the poles of the zeta
function and the implications this has for the oscillations in the eigenvalue counting functions. We will also consider the
convergence of the spectral zeta functions along some Gromov-Hausdorff convergent sequences of Laakso spaces. (Received
September 22, 2018)