1131-11-315　　　　　**Lior Fishman**, **Keith Merrill*** (`merrill2@brandeis.edu`) and **David Simmons**. *A Continued Fraction Algorithm for Spheres.* Preliminary report.

Classical Diophantine approximation seeks to describe how well an irrational number can be approximated by rational numbers, in a quantitative sense. Building upon the theory of (intrinsic) Diophantine approximation on quadratic hypersurfaces recently developed by Fishman, Kleinbock, Merrill, and Simmons, we define a "continued fraction algorithm" which assigns to every irrational point on the n-sphere $\mathbb{S}^n$ a sequence of rationals which are good approximants in a technical sense. We then exhibit numerous striking similarities between the resultant theory and that of the theory of classical continued fractions for real numbers.

This talk will utilize ideas from number theory, dynamics, and hyperbolic geometry, but should be mostly accessible to a large audience. (Received July 17, 2017)