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Lior Fishman* (lior.fishman@unt.edu), **Keith Merrill** and **David Simmons**. *A Continued Fraction Algorithm for Spheres*.

Building upon the theory of intrinsic Diophantine approximation on quadratic hypersurfaces first developed by Fishman, Kleinbock, Merrill, and Simmons (preprint 2015), we define a “continued fraction algorithm” which assigns to every irrational point on a rank one hypersurface a sequence of rationals which are best approximants in a technical sense. We exhibit numerous striking similarities between the resulting theory and that of the theory of classical continued fractions for real numbers. This is joint work with K. Merrill and D. Simmons. (Received August 23, 2018)