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Thomas Garrity* (tgarrity@williams.edu), Department of Mathematics and Statistics,
Williams College, Williamstown, MA 01267. *On Some Functional Analysis Behind
Multidimensional Continued Fractions*. Preliminary report.

At the heart of the proof behind the Gauss-Kuzmin statistics for traditional continued fractions is the transfer operator. The functional analysis behind this operator has been extensively studied for many years, and has some links with special functions. We will look at analogous results for a certain multidimensional continued fraction algorithm. We will show that this algorithm's transfer operator has leading eigenvalue one for a particular Banach space and is nuclear of trace class zero for a particular Hilbert space.

We will review the continued fraction case, explain the triangle multidimensional continued fraction algorithm, explicitly find its transfer operator and then explore its spectral properties. It is in the last part that special functions will (briefly) appear. (Received February 08, 2014)