

1145-11-1966

Thomas Garrity* (tgarrity@williams.edu), Department of Mathematics and Statistics, Williams College, Williamstown, MA 01267. *Families of Division Algorithms: Structure for Multidimensional Continued Fraction Algorithms*. Preliminary report.

There are many reasonable methods for dividing two or more numbers into another number. Each of these methods give rise to a different type of multi-dimensional continued fraction algorithm.

There is way to put almost all known multi-dimensional continued fraction algorithms into a unified family. The method involves systematically subdividing a simplex. This family includes the well-known Mönkemeyer algorithm, the triangle algorithm, the Brun algorithm, the Parry-Daniels algorithm and the Güting algorithm (which in turn is linked to the Jacobi-Perron algorithm).

We will discuss this family and some of its implications, such as their corresponding transfer operators, which in turn have various dynamical systems implications. In particular, when reduced to lower dimensional analogs, we will see how to generate some seemingly new generalizations of traditional continued fractions. (Received September 24, 2018)