

1109-11-54

Joseph A Vandehey* (vandehey@uga.edu). *New constructions of normal continued fraction expansions.*

Consider the sequence of rational numbers

$$\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \dots$$

Alder, Keane, and Smorodinsky showed that if we concatenate the continued fraction (CF) expansions of the above rationals, the resulting expansion will be normal with respect to the CF expansion. This is the only known “simple” construction of a CF-normal number and was discovered over 30 years ago. By replacing an inexplicit ergodic result with a more explicit analytic result, we produce a much larger class of constructions. (Received January 18, 2015)