

1089-11-71

Bill Mance* (mance@unt.edu), Department of Mathematics, General Academics Building 435, 1155 Union Circle #311430, Denton, TX 76203-5017. *Construction of normal numbers through homeomorphisms of Cantor spaces.*

We discuss some recent theoretical developments which allow for techniques from differential topology, fractal geometry, and number theory to work together to construct normal numbers with certain unexpected and pathological properties. The main example will be a construction of a basic sequence Q and a number that is Q -distribution normal and Q -ratio normal but not Q -normal. Time permitting, we will also sketch constructions of basic sequences Q and numbers that are Q -normal of order k and not Q -normal of orders $1, 2, \dots, k - 1$. (Received February 12, 2013)