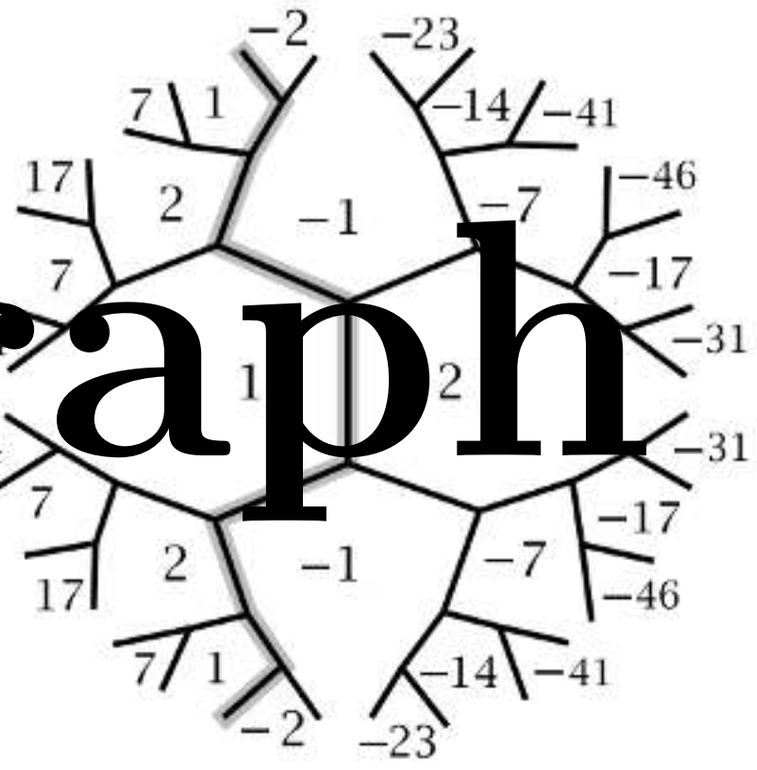
Michigan Math Club

Thursday at 4pm in the Nesbitt Room

Free Pizza and Pop

Exploring the Topograph



Trevor Hyde

Abstract for ❤️14 February 2019❤️

Binary quadratic forms have a long history passing through algebra, geometry, and number theory. Their study attracted some of the biggest names in classical mathematics including Fermat, Euler, Legendre, and Gauss. But to the modern eye much of this work looks like cryptic computations and algebraic manipulations. So what's the big deal? In the 1990's John H. Conway introduced a great way to visualize binary quadratic forms through a tool he calls the topograph. In this talk we explain how the topograph works and demonstrate how it sheds new light on some beautiful classical mathematics. Along the way we will make connections with continued fractions and hyperbolic geometry.