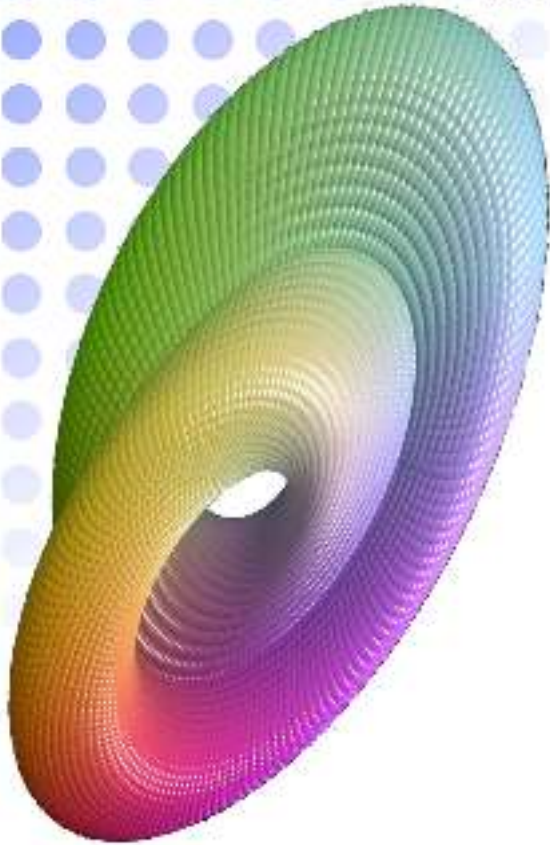# Michigan Math Club

Thursday at 4pm in the Nesbitt Room

Free Pizza and Pop

Descartes' rule of signs and beyond

Harry Richman

Abstract for 21 September 2017

Descartes came up with a "rule of signs" to understand roots of polynomials with real coefficients. Rather than as a precise statement, this rule can be viewed as a heuristic for how polynomials might "ideally" behave. I will describe the rule from this heuristic viewpoint and discuss when the rule does and does not hold. Finally, going beyond real numbers I will explain how this provides motivation for non-Archimedean number systems where the rule of signs always predicts the correct behavior.