

Michigan Math Club

Thursday at 4pm in the Nesbitt Room

Free Pizza and Pop

Resolving Singularities

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Abstract for 16 January

The zero set of a polynomial equation can be quite complicated. For example, the zero set of the “nodal curve” $y^2 = x^3 + x^2$ intersects itself, and the curve given by $y^2 = x^3$ has a cusp. Both of these curves have so-called singularities at the origin. We will explore how one can “remove” or resolve the singularities of a curve, like the above examples, via a process called blowing-up. Given time, we will also discuss how resolving the cusp singularity of $y^a = x^b$ is related to the continued fraction expansion of a/b .

