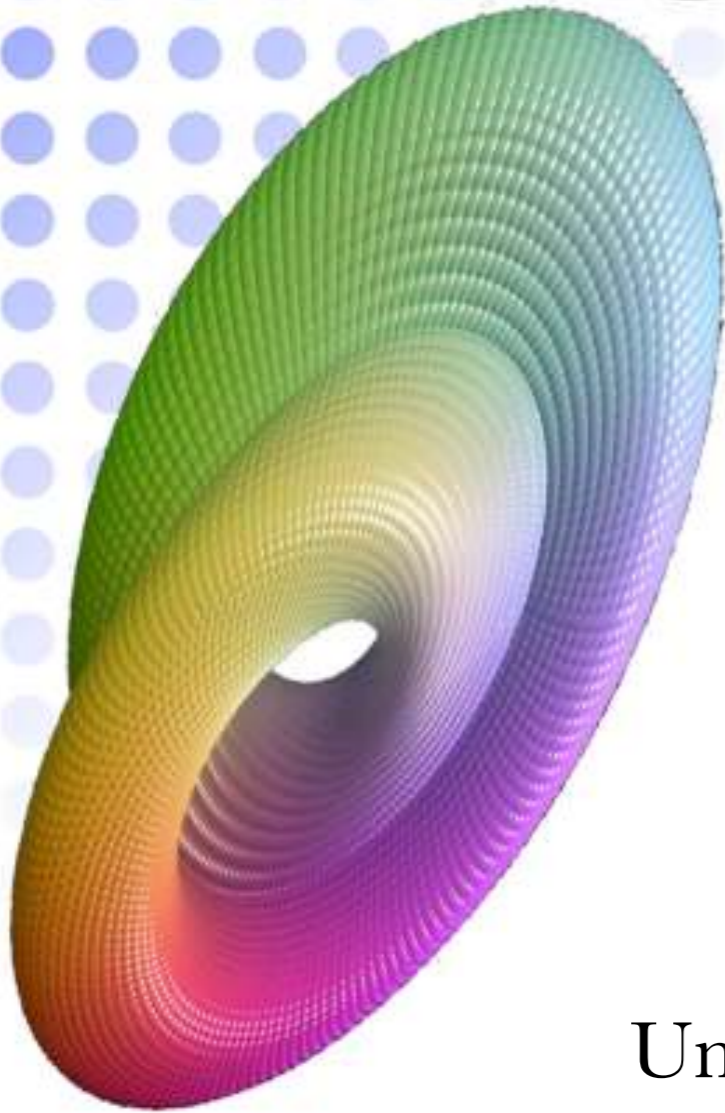


# Michigan Math Club

Meeting [virtually](#) for Winter 2021  
Thursdays at 4pm EST



## Counting real bi-tangents

Isabel Vogt

University of Washington

18 March 2021

Take a real quartic polynomial in two variables  $x$  and  $y$  and consider the points in the  $(x,y)$ -plane where the polynomial is zero (the blue curve is an example). In this talk, we'll consider the special lines in the plane that are tangent to the quartic curve at two points (the black and red lines are examples). In general, as you choose different quartic polynomials, you'll get different numbers of such real lines. As a pre-talk teaser, see if you can figure out what is different between the black and red lines.

