

# Michael Dobbins (Binghamton)

## When Conformal Maps Get Squished

### Abstract for the Combinatorics Seminar 2019 September 3

A map is called conformal when it preserves angles. Consider a sequence of simple closed curves  $C_t$  in the plane that get squished to a path. That is,  $C_t$  consists of a pair of curves  $E_t$  and  $W_t$  that converge to the same curve in Fréchet distance. By the Riemann Mapping Theorem, there is a conformal map from the interior of  $C_t$  to the upper half-plane. Preserving angles comes at the cost of distorting scale, and as  $C_t$  gets squished, this map becomes highly distorted. I will show in this talk that, for appropriate choice of conformal map, the image of any arbitrarily small neighborhood of a single point covers the entire upper half-plane in the limit.

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Last update: **2020/01/29 19:03**