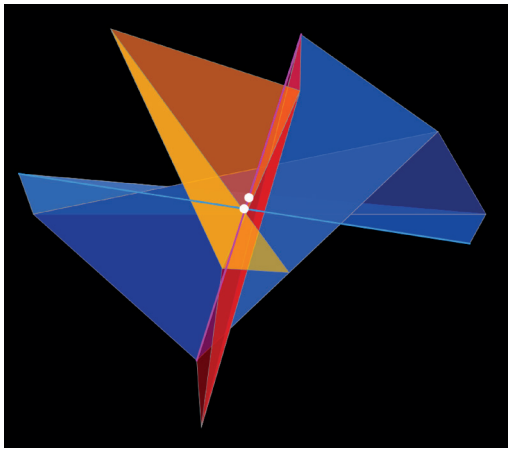
Berlin Mathematics Research Center MATH+

Berlin Mathematical School BMS

MATH+ Friday Colloquium

Friday 19 February 2021 at 15:15

Online (Zoom)



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(Brown U)

On the optimal paper Möbius band

As a mathematician, you have probably had the experience of taking a strip of paper and moving it around in space until it makes a Möbius band. The question is: How short of a piece of paper (of width 1, say) can you use and still make an embedded Möbius band? This question goes back to B. Halpern and C. Weaver in the 1970s.

In this talk, Schwartz will explain the bounds proved by Halpern and Weaver and then show how to improve the lower bound. He will also explain an approach to getting the sharp bound, which amounts to approximating a paper Möbius band by certain kinds of finite tensegrities.

Born in Los Angeles in 1966, Richard E. Schwartz got his Ph.D. in mathematics from Princeton University in 1991. He was a speaker at the International Congress of Mathematicians in 2002 and a Guggenheim Fellow in 2003. He is currently the Chancellor's Professor of Mathematics at Brown University. He likes to study simply stated problems with a geometric flavor, often with the aid of graphical user interfaces and other computer programs that he writes himself. Aside from his work in math, he has written and illustrated a number of picture books, including *You Can Count on Monsters*, *Really Big Numbers*, *Gallery of the Infinite* and *Man Versus Dog*.

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