

# Michigan Math Club

Thursday at 4pm in the Nesbitt Room

Free Pizza and Pop

## The Kakeya Needle Problem

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Abstract for 20 March

In 1917 Kakeya asked the following question: what is the area of the smallest possible set in which a unit line segment can be turned to face in any direction? Incredibly, the answer to this question turns out to be that such a set can be made to have area  $\varepsilon$ , for any positive number  $\varepsilon$ . The proof is surprisingly elementary, and underlies several important theorems in harmonic analysis.

