Hausdorff measures, the ultimate collection of measuring cups

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Date: Tuesday, October 1

Time: 12:00 - 12:50 pm

Location: Room 703, Thackeray Hall

Behnam has been at Pitt since Aug 2015. His research is in the area of Geometric Analysis under supervision of Dr. Hajlasz. He has a passion for teaching mathematics and writing about math (you can find his articles on AMS Graduate Weblog). He is also a member of University Chess Club and holds a USCF rating of 2100. He always plays 1.d4 with White. :)

Hausdorff measure $\mathcal{H}^\alpha(E)$ of a set E is a nonnegative number that measures its "α-dimensional" size. If E is a curve, $\mathcal{H}^1(E)$ is the **length** of the curve, as we know it from Calc 2. But $\mathcal{H}^2(E) = 0$, meaning our 2-dimensional goggles will not notice this set. Hausdorff measure applies to any arbitrary set E and more surprisingly, α does not have to be an integer. Thus you may measure $\sqrt{2}$-, $\frac{2}{3}$-, or even π-dimensional size of a set. I will show you a $\frac{\log 8}{\log 3} = 1.8928$-dimensional carpet from your Calculus 2 book! Food and drinks will be provided!

SPEAKER(S) FOR NEXT WEEK:

REU panel

Research Experiences for Undergraduates

Organized by: Derek Orr, Tom Everest, Jeremiah Morgan, and Jeff Wheeler