

BI-CO MATHEMATICS COLLOQUIUM

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“Distinguishing 3-dimensional manifolds”

Monday, October 27, 2008

Talk at 4:15 – Park 328
Tea at 3:45 – Park 355, Math Lounge

Abstract: To a topologist, a beach ball and an inner tube are not just for summer fun, but they are examples of two very different and distinct surfaces, a.k.a. two-dimensional manifolds. In this talk, we'll discuss the differences between the two-dimensional manifolds and then go one dimension up: are there three-dimensional manifold equivalents of a beach ball and an inner tube? What other three-dimensional manifolds are there? Topologists can theoretically construct all possible (closed, compact, oriented) 3-dimensional manifolds, but distinguishing them apart has been no easy task. We'll present some research on relating various invariants of 3-dimensional manifolds, particularly the classically known Heegaard genus and the more recent Witten-Reshetikhin-Turaev invariants.

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