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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.