



Texas State Topology Seminar

Friday, 2019, February 22, 11:00-11:50 a.m., in DERR 333

Speaker: Dr. David Snyder

Topic: *On Akbulut's notation for 1-handles in 4-manifolds*

ABSTRACT

Some diffeomorphisms of 4-manifolds are difficult to visualize, but the use of handlebodies can help. Kirby's Calculus for framed links in 3-manifolds can be used to invoke handle slides and cancellations in a 4-manifold, which can be seen as manipulation of links in a 3-manifold bounding the given 4-manifold. However, sliding a 2-handle over a 1-handle can change the framing information by an integer multiple of 2, which thus necessitates a rather unnatural notion of having a 'forbidden zone' for such slides. Selman Akbulut invented a clever notation (dotted-circle notation) that resolves this problem, so that the visualized effect of slides on the framing of attaching circles of 2-handles is well-defined.