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Smoothing surfaces in 4-manifolds

In 4-dimensional topology, differences between the smooth and topological categories can be understood as a failure of smoothing topologically embedded disks. Modern smooth techniques, including these from gauge theory, detect a large extent of the failure of disk smoothing, but little was known about when topological disks are smoothable. I will talk about a new smoothing technique for topologically embedded surfaces in smooth 4-manifolds. As applications, we obtain "topological = smooth" results in dimension 4 for isotopy classes of certain disks and spheres. The main results are joint with Byeorhi Kim.

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