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Ribbon cobordisms

The Slice–Ribbon Conjecture states that, given a smooth concordance (a smooth cobordism that is a cylinder) between a knot and the unknot, one can always find a Morse function on it with only index-0 and index-1, but no index-2, critical points. That it is not obviously false is one of the reasons that 4-dimensional topology is so strange. In this talk, I will briefly survey the history of this conjecture and explain some progress in the past few years as well as some connections to contact topology.