Topological complexity of 3-manifolds

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Abstract. We discuss the following problem: Given two 3-manifolds M and N, is there a way to compare the topology of M and N? To study this question we use degree one maps which allow to define a partial order on the set of closed orientable 3-manifolds, up to homotopy equivalence. In this talk we will study two properties of this partial order:
  1. Rigidity: When is a degree one map homotopic to a homeomorphism?
  2. Normal form: Give a canonical decomposition of degree one maps.