

# Fox re-embedding and Bing submanifolds

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**Abstract.** In 1948, Fox showed that every 3-submanifold of the 3-sphere can be re-embedded so that the closure of the complement is a union of handlebodies. In 1958, Bing showed that a closed 3-manifold is the 3-sphere if and only if every knot in the manifold can be isotoped to lie within an embedded 3-ball in the manifold. In this talk, we will discuss a common generalization of these two classical theorems in 3-dimensional topology.