

Theorem 0.1. *Let M be an irreducible manifold which need not to be compact. Let F be an incompressible (compact, closed) boundary component of M . in $\partial M - F$, let F' be an incompressible surface which need neither be closed or compact. Suppose: if k is any closed curves in F , then some non-null multiple of k is homotopic to a curve in F' . Then M is homeomorphic to $F \times I$.*