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**Kirby Calculus in Manifolds with Boundary**

Justin ROBERTS

Abstract: Suppose there are two framed links in a compact, connected 3-manifold (possibly with boundary, or non-orientable) such that the associated 3-manifolds obtained by surgery are homeomorphic (relative to their common boundary, if there is one.) How are the links related? Kirby's theorem gives the answer when the manifold is S^3, and Fenn and Rourke extended it to the case of any closed orientable 3-manifold, or $S^1 \tilde{\times} S^2$. The purpose of this note is to give the answer in the general case, using only minor modifications of Kirby's original proof.