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Qayum Khan* (qkhan@nd.edu), Department of Mathematics, 255 Hurley Hall, University of Notre Dame, Notre Dame, IN 46556. *Rigidity of connected sums of certain 4-manifolds.*

We establish the topological s-cobordism surgery sequence for any closed oriented 4-manifold X that is homotopy equivalent to a connected sum $X_1 \# \dots \# X_n$ of certain factors X_i . Here, it suffices that the fundamental group G_i of each X_i is "good" in the sense of Freedman–Quinn. More generally, each X_i must have an exact s-cobordism surgery sequence.

As a corollary, if each X_i is aspherical and each G_i satisfies the Farrell–Jones Conjecture, then X is topologically s-rigid. The methods use topological cobordisms and homology rather than direct surgeries. (Received January 25, 2010)