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Tim D Cochran, Bridget D Franklin, Matthew Hedden and Peter D Horn*
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concordance and homology cobordism.*

If two knots are concordant via an annulus, their exteriors are homology cobordant relative boundary. One can perform "n-framed Dehn surgery" on this annulus and see that the n-framed Dehn surgeries on the two knots are homology cobordant rel meridians. We consider the converse for $n=0$: if 0-framed Dehn surgeries on two knots are homology cobordant, are the knots concordant? This question has an affirmative answer if one of the knots is the unknot. In the category of smooth cobordism/concordance, we show that the answer is generally "no." We also show the answer is "no" in a generalization of the topological category. (Received September 15, 2011)