1162-57-86 **Allison N. Miller*** (allison.miller@rice.edu) and **Mark Powell**. *Stabilization of knotted surfaces.*

Any two embedded surfaces representing the same homology class in a given 4-manifold become isotopic after finitely many 1-handle additions, as proved by Baykur-Sunukjian. Given two surfaces properly embedded in a fixed 4-dimensional manifold, their *stabilization distance* is the minimal number of 1-handle stabilizations necessary for the surfaces to become ambiently isotopic, and their *generalized stabilization distance* is the minimal number of 1-handle stabilizations if one is also allowed to take connected sum with arbitrary 2-knots and count that as distance zero. For every nonnegative integer m we give a knot J_m in the 3-sphere with two slice discs in the 4-ball whose generalized stabilization distance is exactly m, using the homology of cyclic covers. We then use metabelian twisted homology to derive 'higher-level' bounds on the generalized stabilization number, and use these bounds to prove that slicing discs for a knot coming from a fixed metabolizing link on a Seifert surface can have arbitrarily large generalized stabilization distance.

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