BRAID INDICES OF SURFACE-KNOTS
AND COLORINGS BY QUANDLES

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The braid index of a surface-knot F is the minimal number among the degrees of all simple surface braids whose closures are ambient isotopic to F. We give a lower bound of the braid index of a surface-knot by using the colorings by a quandle. As an application, we prove that an S^2-knot which is the connected sum of s copies of the spun $(n, 2)$-torus knot has the braid index $s + 2$.

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