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**W. Edwin Clark** and **Masahico Saito\*** ([saito@usf.edu](mailto:saito@usf.edu)). *Quandle knot invariants from  $SO(3)$* . Preliminary report.

The quandle 2-cocycle invariant was originally defined in state-sum form using colorings by finite quandles and 2-cocycles as weights. It has an interpretation as a partition of colorings, using colorings of long knots by the quandle extension associated with the cocycle. This interpretation is used towards generalizing the invariant to topological quandles. As an example, colorings of long knots by  $SO(3)$  and spherical quandles of rotations are studied. Regular polygons on the sphere, for example, appear as coloring conditions of some torus knots, and contribute to non-trivial invariant values. (Received July 19, 2017)