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2-Cocycle Invariant and Oriented Singular Knots.

The use of algebraic structures to study unoriented singular knots was introduced in 2017 by Elhamdadi, Hajij, Nelson and the speaker. In 2018, they were extended to the oriented case. We will review these algebraic structures and present some examples. Moreover, we extend the notion of quandle cocycle invariants to oriented singular knots. We will provide explicit examples of pairs of singular knots with the same number of colorings but distinguish between them using the quandle cocycle invariant, thus showing that the quandle cocycle invariant is a good enhancement. The talk is based on a joint preliminary work. (Received September 16, 2019)