1147-57-783   **Jim Hoste***, jhoste@pitzer.edu, and **Patrick D. Shanahan**. *A $\mathbb{Z} \oplus \mathbb{Z}$-family of knot quandles.* Preliminary report.

Suppose K is an oriented knot in a 3-manifold M^3 with regular neighborhood $N(K)$. For each element $\gamma \in \pi_1(\partial N(K))$ we define a quandle $Q_\gamma(K; M^3)$ which generalizes the concept of the fundamental quandle of a knot. In particular, when γ is the meridian of K, we obtain the fundamental quandle. The collection of all such quandles gives a $\mathbb{Z} \oplus \mathbb{Z}$-family of quandles. If K is a knot in M and γ is a primitive element, then we show that there exists a knot K' in a 3-manifold M' such that $Q_\gamma(K; M) \cong Q_\mu(K'; M')$ where μ is the meridian of K'. Starting with a partially framed link L in S^3 where the framed components give a surgery description of the manifold M and a single unframed component represents K we can derive a similar surgery description of K' in M'. Using results of Fenn and Rourke, we may then use this description of K' to record a presentation of the quandle $Q_\gamma(K; M)$. We describe a number of examples of these quandles for knots in various manifolds. (Received January 28, 2019)