Quandle coloring quivers of surface-links

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Abstract: In 2018, K. Cho and S. Nelson introduced the quandle coloring quiver of an oriented knot or link diagram, which is a quiver structure on the set of quandle colorings of a knot or link diagram. Also, they gave a new invariant, called the in-degree quandle quiver polynomial, from the quiver structure.

A surface-link is a smooth embedding of a surface in the 4-space $\mathbb{R}^4$ or S^4. A surface-link can be presented by a marked graph diagram with specific condition, and a marked graph diagram is a generalization of a knot or link diagram. In this talk, we consider quandle coloring quiver invariants for oriented surface-links, represented by marked graph diagrams. We provide example computations for all oriented surface-links with ch-index up to 10 for choices of quandles and endomorphisms.