

Quandles with good involutions and their homologies

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Quandles and their homologies are used to construct invariants of oriented links or oriented surface-links in 4-space. On the other hand the knot quandle can still be defined in the case where the links or surface-links are not oriented, but in this case it cannot be used to construct homological invariants. Here we introduce the notion of a quandle with a good involution, and its homology groups. We can use them to construct invariants of unoriented links and unoriented, or non-orientable, surface-links in 4-space.

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