Cocykle invariants of codimension 2 embeddings of manifolds

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Session: Knot Theory

We consider the classical problem of a position of n-dimensional manifold M^n in $\mathbb{R}^{n+2}$. We show that we can define the fundamental $(n+1)$-cycle and the shadow fundamental $(n+2)$-cycle for a fundamental quandle of knotting $M^n \to \mathbb{R}^{n+2}$. In particular, we show that for any fixed quandle, quandle coloring, and shadow quandle coloring of a diagram of M^n embedded in $\mathbb{R}^{n+2}$ we have $(n+1)$- and $(n+2)$-(co)cycle invariants (i.e., invariant under Roseman moves). The case $n = 2$ is well-known, and the case $n = 3$ we can explane in a geometric way. The general case we described in arXiv:1310.3030v1.