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Central extensions and closure operators in the category of quandles

The aim of this talk is to present some recent results concerning two adjunctions: the first one between the category \mathbf{Qnd} of quandles and its subcategory \mathbf{Qnd}^* of trivial quandles, and the second one between the category of quandles and its Mal'tsev subcategory of abelian symmetric quandles. We will show that these adjunctions are admissible in the sense of categorical Galois theory thanks to some results about the permutability of two different classes of congruences in the category of quandles [6, 2, 7]). We will then give an algebraic description of the corresponding central extensions [8], which for the first adjunction turn out to correspond [4] to the quandle coverings investigated in [3]. We will also examine closure operators for subobjects in the category of quandles. The regular closure operator and the pullback closure operator both corresponding to the reflector from \mathbf{Qnd} to \mathbf{Qnd}^* coincide [5], and we will give an algebraic description of this closure operator. Finally, we will show that the category of connected quandles is a connectedness (see [1] for example) corresponding to the category of trivial quandles.

References:

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