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Closure operators in the category of quandles

We present some recent results concerning the adjunction between the category of quandles and its full subcategory of trivial quandles. We show that this adjunction is admissible [3] in the sense of categorical Galois theory thanks to a result about the permutability of certain congruences in the category of quandles [5]. An algebraic description of the trivial extensions and central extensions [6] is also given, these latter turning out to be the quandle coverings investigated in [2]. We also investigate closure operators for subobjects in the category of quandles; we show that the regular closure operator and the pullback closure operator both corresponding to the reflector of the previous adjunction coincide [4], and give an algebraic description of this closure operator. Finally, we show that the category of connected quandles is a connectedness in the sense of Arhangel'skiï and Wiegandt[1] corresponding to the category of trivial quandles.

This is joint work with Marino Gran.

References:

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