



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali (/jspui/)
/ Publications of IISER Mohali (/jspui/handle/123456789/4)
/ Research Articles (/jspui/handle/123456789/9)

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/4336>

Title:	Quandle cohomology, extensions and automorphisms
Authors:	Singh, Mahender (/jspui/browse?type=author&value=Singh%2C+Mahender)
Keywords:	Automorphism Dynamical cocycle Factor set Group extension
Issue Date:	2021
Publisher:	Elsevier
Citation:	Journal of Algebra, 585, 558–591.
Abstract:	A quandle is an algebraic system with a binary operation satisfying three axioms modelled on the three Reidemeister moves of planar diagrams of links in the 3-space. The paper establishes new relationship between cohomology, extensions and automorphisms of quandles. We derive a four term exact sequence relating quandle 1-cocycles, second quandle cohomology and certain group of automorphisms of an abelian extension of quandles. A non-abelian counterpart of this sequence involving dynamical cohomology classes is also established, and some applications to lifting of quandle automorphisms are given. Viewing the construction of the conjugation, the core and the generalised Alexander quandle of a group as an adjoint functor of some appropriate functor from the category of quandles to the category of groups, we prove that these functors map extensions of groups to extensions of quandles. Finally, we construct some natural group homomorphisms from the second cohomology of a group to the second cohomology of its core and conjugation quandles.
Description:	Only IISER Mohali authors are available in the record.
URI:	https://doi.org/10.1016/j.jalgebra.2021.06.016 (https://doi.org/10.1016/j.jalgebra.2021.06.016) http://hdl.handle.net/123456789/4336 (http://hdl.handle.net/123456789/4336)
Appears in	Research Articles (/jspui/handle/123456789/9)
Collections:	

Files in This Item:

File	Description	Size	Format	
Need To Add...Full Text_PDF..pdf (/jspui/bitstream/123456789/4336/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF..pdf)	Only IISER Mohali authors are available in the record.	15.36 kB	Adobe PDF	View/Open (/jspui/handle/123456789/4336/bitstream/123456789/4336/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF..pdf)

[Show full item record \(/jspui/handle/123456789/4336?mode=full\)](#)

[Statistics \(/jspui/handle/123456789/4336/statistics\)](#)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.