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Seung Yeop Yang* (syyang@gwu.edu) and **Jozef H. Przytycki**. *The torsion of rack and quandle homology groups of some finite quandles.*

It is a classical result in reduced homology of finite groups that the order of a group annihilates its homology. Similarly, we have proved that the torsion subgroup of rack and quandle homology of a finite quasigroup quandle is annihilated by its order. But it does not hold for connected quandles in general.

We prove that for some connected quandles, the order of their quandle inner automorphism groups annihilate the torsion parts of rack and quandle homology. We study as well annihilation of rack and quandle homology of some non-connected quandles. As a result, we partially solve the conjecture [M. Niebrzydowski, J. H. Przytycki, Homology operations on homology of quandles, Journal of Algebra, 324, 2010, 1529-1548, Conjecture 14] that the number k annihilates $\text{tor}H_n(R_{2k})$, unless $k = 2^t, t > 1$. (Received August 10, 2015)