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**J Scott Carter\*** ([carter@jaguar1.usouthal.edu](mailto:carter@jaguar1.usouthal.edu)), Department of Mathematics and Statistics,  
ILB 325, Mobile, AL 36688. *Non-involutory connected quandle extensions with good involutions.*

This is based on Joint work with Kanako Oshiro and Masahico Saito.

The dihedral group of order  $2(2n + 1)$  is naturally covered by a sub-group of the hyper-octahedral group. This extension is a semi-direct product of the dihedral group and the direct sum of  $2n$  copies of the cyclic group of order 2. We can use the group extension to define a quandle extension that is connected, not involutory, but has a good involution. The extensions generalize the octahedral quandle that is also known as  $QS_6$ .

So far, many knots that are  $(2n + 1)$ -colorable have also been shown by others to be colorable by this quandle extension. In independent work, Silver and Williams have used these lifted colorings to get interesting twisted Alexander polynomials. (Received September 07, 2009)