1080-57-41 **Reza Chamanara**, **Jun Hu** and **Joel Zablow*** (dquandle@netscape.net). *Extending the Dehn quandle to shears and foliations on the torus.*

Working on the torus $\mathbb{T}^2$, we extend the original Dehn quandle action given by Dehn twists along circles, applied to circles, to a quandle structure for shears along measured geodesic foliations acting upon such foliations. This generalizes the Dehn quandle of the torus. We extend results relating the homology of the Dehn quandle of a surface to invariants of Lefschetz fibrations over the disk D^2, having the given surface as fiber. The original invariants dealt with monodromy associated to reducible homeomorphisms. The extension, in the case of a fibration by tori, considers monodromy associated to Anosov homeomorphisms of the torus. We also apply certain quandle homology 2-cycles to obtain specific factorizations of certain elements of SL(2,R), fixing vectors corresponding to circles and measured geodesic foliations. (Received December 12, 2011)