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Siu-Hung Ng* (sng@lsu.edu), Louisiana State University, Baton Rouge, LA 70803. *Abelian 3-cocycles of finite abelian groups.*

Abelian 3-cocycles of a finite abelian group G are those complex valued 3-cocycles ω of G such that the twisted quantum double $D^\omega(G)$ is a commutative algebra. These 3-cocycles are different from the Eilenberg-MacLane cocycles of G but they can be characterized by the alternating trilinear forms associated with the 3-cocycles of G . If G has odd order, its abelian 3-cocycles are exactly those images of the restriction of the 3-cocycles of the generalized dihedral group $G \rtimes \mathbb{Z}_2$ on G . In this talk, we will discuss these characterizations. (Received July 15, 2017)