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Jozef H. Przytycki* (przytyck@gwu.edu), Department of Mathematics, George Washington University, Washington, DC 20052. *Cocycle multipliers of Yang-Baxter operators.*

Let $R, R' : V \otimes V \rightarrow V \otimes V$ be two (pre) Yang-Baxter operators, with $V = kX$. In the basis X^2 we have $R = (R_{c,d}^{a,b})$ and $R' = ((R')_{c,d}^{a,b})$. We assume that there is a 2-cochain $f : V \otimes V \rightarrow k$ with $R_{c,d}^{a,b} = f(a,b)(R')_{c,d}^{a,b}$. (We put $f(a,b) = 0$ if $(R')_{c,d}^{a,b} = 0$ for every (c,d) .) We discuss a co-cycle character of f motivated by the case when R' is yielded by wrack or biwrack magmas. Of special interest is the case when R' is a column unital matrix (e.g. column stochastic matrix) that is $\sum_{b,c} (R')_{c,d}^{a,b} = 1$ for any $(a,b) \in X^2$. The definition of homology of such R' is well understood via simple graphical visualization. (Received August 30, 2015)