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Charles Frohman* (charles-frohman@uiowa.edu), Department of Mathematics, The University of Iowa, Iowa City, IA 52242. *Farey Diagrams, simple closed curves, and multiplication in the Kauffman bracket skein algebra of a punctured torus.*

In the 90's Frohman and Gelca derived the product to sum formula using noncommutative cosines that made computation in the Kauffman bracket skein algebra of a punctured torus tractible. Many people have sought to extend this mode of computation to the skein algebra of the punctured torus.

In this lecture I will introduce a cocycle on the Farey diagram that encodes the failure of the product to sum formula, explain elementary rules for it's computation, and use it to give an elementary proof of a theorem of Bonahon and Wong about skein algebras at roots of unity. (Received February 21, 2013)