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Amit Sharma* (sharm121@umn.edu) and **Alexander A Voronov**. *Dijkgraaf-Witten theory using cohomology with coefficients in Picard groupoids.*

Dijkgraaf-Witten theory, a gauge theory with finite gauge group, was introduced in a paper of Dijkgraaf and Witten. A detailed description of this theory was given by Freed and Quinn in a subsequent paper in which they carry through all the steps of the path integral quantization. In this joint work with Alexander Voronov, we reconstruct the Dijkgraaf-Witten theory using techniques of categorical topology. The integration defined in Freed and Quinn's paper is captured in a cap product between homology and cohomology with coefficients in Picard groupoids. This language allows us to go beyond Freed and Quinn's theory. (Received February 09, 2014)