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Charles Frohman* (charles-frohman@uiowa.edu), Department of Mathematics, The University of Iowa, Iowa City, IA 52242. *Representations of Web Groups and Spider Evaluation.*

A web is an oriented trivalent planar graph so that all its vertices are sources and sinks. Greg Kuperberg defined an invariant of webs which is a Laurent polynomial with integer coefficients that we call the *spider evaluation* of the web. The web group is the fundamental group of the complement of the web, where we view the plane as lying in \mathbb{R}^3 . A meridian of a web group is a loop that goes from the basepoint above the plane around one edge. We consider the variety of representations of the web group into $SU(3)$ so that the meridians are all sent to matrices of trace equal to -1 . We prove that the process of spider evaluation selects a collection of irreducible components of the representation variety, and there is a subring of the rational cohomology ring of those components so that the spider evaluation of the web is the sum of the symmetrized Poincare polynomials of those components. (Received June 03, 2017)