

1116-46-1152      **Michael Hartglass\*** ([michael.hartglass@ucr.edu](mailto:michael.hartglass@ucr.edu)), University of California, Riverside,  
Riverside, CA 92521. *Free graph operator algebras and laws of loops.*

A canonical ( $C^*$  or von Neumann algebra) associated to a weighted graph will be presented. Necessary and sufficient conditions for simplicity, uniqueness of trace, and factoriality will be explored. The spectral measure of certain self-adjoint polynomials in the generators of this algebra will be shown to have atoms of as small a size as possible. An application to eigenvalues of self-adjoint polynomials in Wishart matrices will be presented. (Received September 17, 2015)