1077-42-1441   **Allan Greenleaf**, **Alex Iosevich** and **Eyvindur Ari Palsson***
(`palsson@math.rochester.edu`), UR Mathematics, 915 Hylan Building, RC Box 270138,
Rochester, NY 14627. *On multilinear generalized Radon transforms.*

In the 80s and early 90s, Phong and Stein initiated the study of linear generalized Radon transforms. These operators have found applications in many branches of harmonic analysis, partial differential equations and other areas. In this talk we will motivate a definition of multilinear generalized Radon transforms based on a graph theoretic perspective. We will consider a multilinear spherical averaging operator as a model operator and present some results on the boundedness of the model operator along with applications to finite point configuration problems. The particular finite point configuration problems we consider are multipoint configuration versions of the Falconer distance problem, which in turn can be thought of as a continuous analog of the Erdős distance problem. (Received September 19, 2011)