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Jing Wang* (gwjwang@gwu.edu) and **Jozef Przytycki**. *Quiver Homology: Khovanov Approach and Barycentric Subdivision Approach.*

Few years after Khovanov homology was introduced as the categorification of Jones polynomial for knots, its version for graphs was developed by Helme-Guizon and Rong, Later in 2005, Przytycki observed the relation with Hochschild homology. In this talk, I will define quiver homology (homology of directed graphs) via two different approaches. Our first approach generalizes Khovanov type graph homology to non-commutative algebra case by considering abstract simplicial complex structure. In an alternative approach, we apply homology theory of a small category with functor coefficients and follow the idea of multi-paths proposed by Turner and Wagner. In particular, we can realize it as the barycentric subdivision from the first definition. (Received September 22, 2014)