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Melissa Zhang* (melissa.zhang@uga.edu) and **Rostislav Akhmechet**. *Constructions toward topological applications of $U(1) \times U(1)$ equivariant Khovanov homology.*

In 2018, Khovanov and Robert introduced a version of Khovanov homology over a larger ground ring, termed $U(1) \times U(1)$ -equivariant Khovanov homology. This theory was also studied extensively by Taketo Sano. Ross Akhmechet was able to construct an equivariant annular Khovanov homology theory using the $U(1) \times U(1)$ -equivariant theory, while the existence of a $U(2)$ -equivariant annular construction is still unclear.

Observing that the $U(1) \times U(1)$ complex admits two symmetric algebraic gradings, those familiar with knot Floer homology over the ring $\mathbb{F}[U, V]$ may naturally ask if these filtrations allow for algebraic constructions already seen in the knot Floer context, such as Ozsváth-Stipsicz-Szabó's $\Upsilon_K(t)$. In this talk, I will describe the construction and properties of such an invariant. (Received September 19, 2021)