Mathematics, Statistics, and Computer Science   **@ UIC**

Commutative Algebra Seminar

Multiplicities of determinantal thickenings

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Abstract: In 2005, Cutkosky, Ha, Srivinivasan and Theodorescu studied the generalized multiplicity defined by the 0-th local cohomology, followed by the work by Katz-Validashti in 2010, Ulrich-Validashti in 2011, and Cutkosky in 2014, and was considered as a generalization of the classical Hilbert-Samuel multiplicity. In 2019 Dao and Montano generalized this notion to the j-th local cohomology (here we call the j-multiplicity) of R/I^t. However its existence and rationality is unknown in general. Using the representation theoretical tools developed by Raicu et al, in this talk we will show the closed formula of the j-multiplicity of determinantal thickenings of maximal minors in the m x n matrix for a suitable choice of j, which extended the work by Jeffries, Montano and Varbaro in 2015, and the work by Kenkel in 2019.

Wednesday, March 16 at 3:00 PM in Zoom