1172-13-121   **Thai Thanh Nguyen***, 6823 St. Charles Ave, New Orleans, LA 70118. *The Initial Degree of Symbolic Powers of Ideals of Fermat-type Configurations.*

Fermat arrangement of lines has been studying for a long time and attracted a lot of attention recently in commutative algebra research since it appeared as the first example of the non-containment between the third symbolic power and the second ordinary power of a defining ideal of a set of points in $\mathbb{P}^2$. Since then, the ideals corresponding to Fermat arrangements, namely Fermat ideals, has been studied extensively. The study of generalizations of Fermat line arrangements to Fermat-type arrangements of hyperplanes in higher dimensional projective spaces and their counterparts, Fermat-type ideals, also provide more counterexamples for containment problem, and examples in other problems such as in the theory of unexpected hypersurfaces. In this talk, I will show the computations of the initial degrees of symbolic powers of Fermat-type ideals in $\mathbb{P}^2$ and $\mathbb{P}^3$, and their applications in proving containment and calculating resurgence numbers. (Received August 22, 2021)