

Tsuchiya, Akiyoshi, Gorenstein simplices with a given δ -polynomial

It is fashionable among the study on convex polytopes to classify the lattice polytopes with a given δ -polynomial. As a basic challenges toward the classification problem, we achieve the study on classifying lattice simplices with a given δ -polynomial of the form $1 + t^{k+1} + \dots + t^{(v-1)(k+1)}$, where $k \geq 0$ and $v > 0$ are integers. The lattice polytope with the above δ -polynomial is necessarily Gorenstein. A complete classification is already known, when v is prime. In this talk, a complete classification will be performed, when v is either p^2 or pq , where p and q are prime integers with $p \neq q$. This talk is based on joint work with Takayuki Hibi and Koutarou Yoshida.