The generalization of enumeration on labeled even graphs

Kumi Kobata*, Kinki University

Nakamoto-Shirakura-Tazawa’s theorem is a formula for enumeration on self-complementary graphs with given number of vertices. Ohno generalized their formula for edge colored complete graphs. In his generalization, the ordinary graphs are regarded as the case of 2-colored complete graphs.

In this talk, we will study a formula for enumeration on $3n$-graphs. We call a graph “even” (resp. “$rn$”) if the degree of its each vertices is even (resp. a multiple of $r$). Recently, Tazawa gave another proof of Read’s formula for enumeration on even graphs. Based on Tazawa’s new proof, we generalize Read’s theorem for the case of $3n$-graphs. The basic idea is similar to Ohno’s generalization for edge colored graphs, and similar formulas for enumeration on $rn$-graphs can be obtained for all natural numbers $r$.

Keywords: even graph, enumeration of graphs