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*Pure-cycle Hurwitz factorizations and multi-noded rooted trees*

Pure-cycle Hurwitz numbers count the number of connected branched covers of the projective line where each branch point has only one ramification point over it. The main result of the talk is that when the genus is $0$ and one of the ramification indices is $d$, the degree of the covers, the pure-cycle Hurwitz number is $d^{r-3}$, where $r$ is the number of branch points. This is equivalent to the statement that the number of minimal factorizations of a $d$-cycle into a given type is $d^{r-2}$.

Springer and Irving independently proved the above result by symmetrizing the problem. We give a "desymmetrized" bijective proof. Our argument proceeds by constructing a new combinatorial class of objects which we call multi-noded rooted trees, showing it has cardinality $d^{r-2}$, and establishing a bijection between this new class and minimal factorizations.