1150-11-96 **Gilyoung Cheong*** (gcheong@umich.edu). *Cohen-Lenstra distributions from p-adic matrices.* Preliminary report.

In this talk, we will understand how to prove that the distribution of the cokernel of an $n \times n$ random $\mathbb{Z}_p$-matrix with respect to the Haar measure converges to the Cohen-Lenstra distribution, as n goes to infinity, where p is a prime number. Using the cycle index theory, a technique from algebraic combinatorics, we will generalize two results of Friedman and Washington on the asymptotic behavior of such distributions when n is large. This is from a joint work with Yifeng Huang.

If time permits, we will discuss the asymptotic behavior when p is large, which turns out to be related to the distribution of a random permutation in S_n. This is from a joint work with Hayan Nam and Myungjun Yu. (Received June 30, 2019)