

1086-05-1405 **Igor Pak** and **Jed Yang*** (jedyang@ucla.edu). *Hard tiling problems with simple tiles.*

Given a set of tiles (think polyominoes) and a region, can we cover the region by translated copies of the tiles without overlaps? This tileability question is undecidable in general and NP-complete for finite regions.

In this talk, we will focus on the complexity of finite problems. Our goal is to describe some simple tiles where the tiling problem is still hard. In particular, there is a fixed set of rectangular tiles whose tileability problem is NP-complete. If time permits, we will also discuss tilings in higher dimensions using generalized dominoes. (Received September 21, 2012)