1147-05-852 **Oliver Pechenik*** (pechenik@umich.edu), 530 Church St, Ann Arbor, MI 48109, and **Julianna Tymoczko** (jtymoczko@smith.edu), 10 Elm Street, Northampton, MA 01063. *Dynamics of height 3 plane partitions.* Preliminary report.

We study the dynamics of the rowmotion operator on plane partitions in an $a \times b \times c$ box. It is known that there are many orbits of size $a + b + c - 1$. Indeed, this is the order of the operator for plane partitions of height 1 (Brouwer & Schrijver, 1974), height 2 (Cameron & Fon-der-Flaass, 1995), and conjecturally also height 3. The height 3 case is particularly intriguing because, for height 4 and above, the order is easily seen to be much greater than $a + b + c - 1$.

Our approach is to construct an equivariant map from height 3 plane partitions to certain decorated planar hypergraphs so that rowmotion corresponds to planar rotation. These hypergraphs are common generalizations of noncrossing set partitions and Kuperberg's $\mathfrak{sl}_3$-webs. (Received January 29, 2019)