Montek Singh Gill* (montekg@umich.edu). Stable operads and spectral chains.

Let $\mathcal{EZ}$ denote the Eilenberg-Zilber operad. McClure and Smith have constructed a small combinatorial $E_\infty$ operad $\mathcal{MS}$ which embeds into $\mathcal{EZ}$ via an inclusion $\mathcal{MS} \to \mathcal{EZ}$. Both $\mathcal{EZ}$ and $\mathcal{MS}$ act naturally on the normalized cochains $N^\bullet(X)$ of a simplicial set $X$. I will discuss a notion of suspension of operads, and the fact that $\mathcal{EZ}$ and $\mathcal{MS}$ admit stabilization maps $\Sigma \mathcal{EZ} \to \mathcal{EZ}$ and $\Sigma \mathcal{MS} \to \mathcal{MS}$. I will discuss a notion of a stable operad, and will discuss stable analogues $\mathcal{EZ}_{st}$ and $\mathcal{MS}_{st}$ of the Eilenberg-Zilber and McClure-Smith operads. I will then discuss some applications of these concepts, including a convenient notion of spectral chains. (Received June 12, 2018)