Katherine Vance* (kvance@rice.edu). Tau invariants for balanced spatial graphs. Preliminary report.

Recently Harvey and O’Donnol defined a combinatorial Heegaard Floer homology theory $\hat{HFG}$ for spatial graphs. Their theory is relatively bigraded, with an integer-valued Maslov grading and a relative Alexander grading, which takes values in the first homology of the spatial graph exterior. We define a $\mathbb{Z}$-filtered chain complex $\hat{CG}$ for balanced spatial graphs whose associated graded chain complex has homology determined by $\hat{HFG}$. We use this to show that there is a well-defined $\tau$ invariant for balanced spatial graphs generalizing the $\tau$ knot concordance homomorphism defined by Ozsvath-Szabo and Rasmussen. One step in showing there is a filtration is to lift the relative Alexander grading to an absolute grading. (Received September 11, 2014)