

Meeting: 1005, Newark, Delaware, SS 1A, Special Session on Homotopy Theory (in Honor of Donald M. Davis's and Martin Bendersky's 60th Birthdays)

1005-55-72 **Samson Sanbladze** and **Ronald Umble*** (ron.umble@millersville.edu), Millersville University, Department of Mathematics, Millersville, PA 17551. *Matrons and A_∞ -Bialgebras*.

We introduce the notion of a matron $M = \oplus M_{m,n}$ whose submodules $\oplus M_{m,1}$ and $\oplus M_{1,n}$ are non- Σ operads. We define a free matron \mathcal{H}_∞ generated by a singleton in each bidegree $\neq (1, 1)$ and realize \mathcal{H}_∞ as the cellular chains on polytopes $KK_{m,n}$ of which $KK_{m,1}$ and $KK_{1,n}$ are Stasheff associahedra. We define an A_∞ -bialgebra as an algebra over \mathcal{H}_∞ and mention some applications. (Received January 27, 2005)