1125-16-1499 **Daniel P. Bossaller*** (db684513@ohio.edu) and **Sergio R. López-Permouth** (lopez@ohio.edu). *Associativity and Infinite Matrices.* Preliminary report.

Given an infinite dimensional vector space V with basis $\mathcal{B} = \{e_i : i < \omega\}$ over a field k, it is well known that the ring of left endomorphisms of V is isomorphic to the ring of column finite matrices $\mathrm{CFM}(k)$, an associative ring. It is also well known that associativity does not hold for three arbitrary infinite matrices. In this talk I will give necessary and sufficient conditions for the associativity of the product of three arbitrary infinite matrices, and explore a applications of this theory to infinite-dimensional linear algebra. This is joint work with Sergio R. López-Permouth. (Received September 17, 2016)