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Julien E Clancy* (julien.clancy@yale.edu), 367 Elm Street Apt. 402, New Haven, CT 06511, and **Rina Friedberg, Indraneel Kasmalkar, Isaac Loh, Tudor Pădurariu, Cesar Silva** and **Sahana Vasudevan**. *On the Ergodicity of Products of Transformations in Infinite Measure*.

Weak mixing for finite measure-preserving transformations has many interesting equivalent characterizations, among which is that $T \times T$ is ergodic. This in particular implies that $T \times T^{-1}$ must be ergodic. It has been known for some time that many of these characterizations do not remain equivalent in the infinite measure-preserving case. In this talk we will construct infinite measure-preserving rank one transformations such that $T \times T$ is ergodic but $T \times T^{-1}$ is not ergodic, and other related examples. This partially answers a question of Bergelson. The methods are combinatorial and probabilistic and use the notion of descendants in the constructions of the transformations. (Received September 16, 2014)