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Hamed Hatami* (hatami@cs.mcgill.ca), **Pooya Hatami** and **Yaqiao Li**. *A characterization of functions with vanishing averages over products of disjoint sets.*

We characterize all integrable functions $f : [0, 1]^m \rightarrow \mathbb{R}$ satisfying $\int_{A_1 \times \dots \times A_m} f = 0$, for any collection of disjoint sets $A_1, \dots, A_m \subseteq [0, 1]$ with prescribed measures. We use this characterization to settle some conjectures of Janson and Sös on pseudo-random graph properties. (Received September 05, 2015)