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Mokshay Madiman* (madiman@udel.edu), UD Department of Mathematical Sciences, 501 Ewing Hall, Newark, DE 19716, and **James Melbourne** and **Peng Xu**. *Rogozin's convolution inequality for locally compact groups*.

An influential inequality of Rogozin for the essential supremum of a convolution of probability density functions on the real line is extended to arbitrary unimodular locally compact groups for two densities, and to Euclidean spaces for an arbitrary number of densities. Consequences include an inequality for the Rényi entropy of order infinity of sums of independent random vectors, providing an asymptotically sharp refinement of an inequality of Bobkov and Chistyakov, and a multidimensional generalization of results of Livshyts, Paouris and Pivovarov. (Received August 29, 2016)