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Alexander (Oleksandr) V Tovstolis* (atovstolis@math.okstate.edu), Department of Mathematics, Oklahoma State University, 401 Mathematical Sciences, Stillwater, OK 74078. *On Riesz Decomposition of Super-Polyharmonic Functions.*

We consider a Riesz decomposition of a function u , which is m -superharmonic in \mathbb{R}^n . It is shown that u is a sum of the Riesz potential of the measure $\mu = (-\Delta)^m u$ and an m -harmonic function if and only if a particular linear combination of spherical means for u is bounded, and some mild condition is satisfied. Some easy-to-check sufficient conditions are also obtained.

The statement generalizes the results of K. Kitaura and Y. Mizuta (2006) for super-biharmonic functions. (Received August 21, 2014)