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Title: Amenability and harmonic L^p-functions on hypergroups

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Let K be a locally compact hypergroup with a left invariant Haar measure. We show that the Liouville property and amenability are equivalent for K when it is second countable. Suppose that σ is a non-degenerate probability measure on K, we show that there is no non-trivial σ-harmonic function which is continuous and vanishing at infinity. Using this, we prove that the space $H^p_\sigma(K)$ of all σ-harmonic L^p-functions is trivial for all $1 \leq p < \infty$. Further, it is shown that $H^\infty_\sigma(K)$ contains only constant functions if and only if it is a subalgebra of $L^\infty(K)$. In the case where σ is adapted and K is compact, we show that $H^p_\sigma(K) = \mathbb{C}1$ for all $1 \leq p \leq \infty$.

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