Amenability of Compact Hypergroup Algebras

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We show that for a compact hypergroup K, the hypergroup algebra $L^1(K)$ is amenable as a Banach algebra if the hyperdimensions of irreducible representations of K are bounded above. Conversely if $L^1(K)$ is amenable, we show that the ratios of hyperdimension to the dimension of irreducible representations of K are bounded above. These are equivalent for compact abelian hypergroups.