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Hopf algebras of smooth functions on compact Lie groups

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Abstract: A C^∞ -Hopf algebra is a C^∞ -algebra which is also a convenient Hopf algebra with respect to the structure induced by the evaluations of smooth functions. We characterize those C^∞ -Hopf algebras which are given by the algebra $C^\infty(G)$ of smooth functions on some compact Lie group G , thus obtaining an anti-isomorphism of the category of compact Lie groups with a subcategory of convenient Hopf algebras.

Keywords: C^∞ -Hopf-algebras, algebras of smooth functions on compact Lie groups, duality theorem

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