

INSALATE DI MATEMATICA



Purely Coclosed G_2 -Structures on Nilmanifolds

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Giorgia Petracci

Università degli Studi
dell'Insubria

IN THIS TALK

A G_2 -structure on a 7-dimensional manifold M is equivalent to the existence of a globally defined positive 3-form. This form determines an orientation and a Riemannian metric on M . Given an orientation and a Riemannian metric, one can define an isomorphism between the spaces of 3-forms and 4-forms on M , called the Hodge operator. Thanks to the Hodge operator, one can define purely coclosed G_2 -structures. We study left-invariant G_2 -structures on nilmanifolds, which are compact quotients of connected, simply connected nilpotent Lie groups by a lattice.

 **words:** G_2 structures, Principal bundles, Nilmanifolds,
Lie Groups, Differential Forms