Closed G_2-structures on compact locally homogeneous spaces

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G_2-structures defined by a closed positive 3-form constitute the starting point in various known and potential methods to obtain holonomy G_2-metrics on 7-manifolds. Although linear, the closed condition for a G_2-structure is very restrictive, and no general results on the existence of closed G_2-structures on compact 7-manifolds are known. In the seminar I will present some results for compact locally homogeneous spaces admitting closed G_2-structures.