

On Riemannian fat associated bundles

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Fat associated bundles constitute an important tool in constructing Riemannian metrics of positive and non-negative curvature. The so called fatness condition in general is rather complicated and thus was analyzed only in particular cases of associated bundles. I will remind classical results in the matter and introduce recent developments since we were able to find necessary conditions for the existence of such bundles in the case of arbitrary G -structures over homogeneous spaces. These conditions yield a kind of classification of fat bundles associated with G -structures over compact homogeneous spaces provided that the connection in a G -structure is canonical.