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Abstract

Secondary characteristic classes of transversely holomorphic foliations are discussed. Several examples of transversely holomorphic foliations with non-trivial Godbillon–Vey class are given. It is shown that if the complex codimension is odd, then there are at least two foliations which are distinct as real foliations. Some relation between the non-triviality and the residue due to Heitsch is explained. On the other hand, it is shown that the Godbillon–Vey class is rigid under deformations in the category of transversely holomorphic foliations. It is done by introducing infinitesimal derivatives of secondary classes after Heitsch. Alternative proofs of the rigidity are also given. Finally, an attempt to find a version of Duminy's theorem for transversely holomorphic foliations is presented.