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Gauss-Bonnet theorem and Crofton type formulas in complex space forms

Joint work with Eduardo Gallego, and Gil Solanes

In this talk, we will express the measure of complex r-planes meeting a convex body in a complex space form in terms of the Hermitian intrinsic volumes, a basis of smooth invariant valuations given by A. Bernig and J. Fu in [1]. We will also give two expressions for the Gauss-Bonnet-Chern formula in complex space forms. One of them expresses the Gauss curvature integral in terms of the Euler characteristic and some Hermitian intrinsic volumes. The other one involves the measure of complex hyperplanes meeting the domain.

References:

[1] Bernig, A., Fu, J. (2008): Hermitian integral geometry. arXiv:0801.0711v5