

SPECIAL METRICS ON COMPLEX NILMANIFOLDS

Luis Ugarte

Universidad de Zaragoza, SPAIN

In this talk we consider several classes of Hermitian structures related to the Gauduchon metrics in the following sense. On the one hand, Fu, Wang and Wu have introduced recently the class of 1-st Gauduchon structures, which is a generalization of the Gauduchon metrics that contains the class of strong Kähler with torsion structures. On the other hand, Popovici has introduced the special class of strongly Gauduchon metrics, which contains the balanced Hermitian structures. We will show some relations among these classes of Hermitian metrics with special emphasis on 6-dimensional nilmanifolds endowed with an invariant complex structure. In the strongly Gauduchon case, the existence of such metrics is studied in relation to the degeneration of the Frölicher spectral sequence, as well as the behaviour under small deformation of the complex structure.