Geometry Seminar

Killing fields and homogeneous spaces

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Time: 10:30 am

Acesso à sala virtual:

Abstract. In this talk we are concerned with homogeneous Riemannian spaces. Our point of view is mainly geometric rather than algebraic. We intend to draw the attention to some nice and interesting geometric techniques that are not usually considered, or emphasized as it should, in homogeneous geometry. The main topics of our talk are:

- The so-called Kostant connection that regards a Killing field as parallel sections of the *canonical* bundle $E \to TM \oplus \Lambda^2(TM)$ with respect the Kostant connection that encodes the *Killing equation* and the *affine Killing equation*.

- Parallel transport along integral lines of Killing fields.

- Remarks about the holonomy of homogeneous spaces and a criterion for the irreducibility of a homogeneous Riemannian manifold.

- The index of symmetry.

-The nullity of the curvature tensor and recent result about the structure of homogeneous riemannian manifolds with nullity.