1077-22-1342   **Aloysius G Helminck*** (`loek@ncsu.edu`), Department of Mathematics, Campus Box 8205, NC State University, Raleigh, NC 27695. *Generalized Cartan subspaces.* Preliminary report.

Let G be a connected reductive algebraic group defined over a field k of characteristic not 2, σ an involution of G defined over k, H a k-open subgroup of the fixed point group of σ and G_k (resp. H_k) the set of k-rational points of G (resp. H). The variety G_k/H_k is a generalization of a real reductive symmetric spaces to arbitrary fields and is called a symmetric k-variety. For real and p-adic symmetric k-varieties the space $L^2(G_k/H_k)$ of square integrable functions decomposes into several series, one for each H_k-conjugacy class of Cartan subspaces of G_k/H_k. In this talk we will discuss some recent results about the H_k-conjugacy classes of Cartan subspaces. (Received September 19, 2011)