

Cycle transversal Mumford-Tate domains

Abstract

Flag domains are open orbits of real semisimple Lie groups in flag manifolds of their complexifications. A special class of flag domains constitute the classifying spaces for variations of Hodge structure, namely period domains or more generally Mumford-Tate domains. In this talk I will consider the problem of classifying all equivariant embeddings of an arbitrary flag domain in a period domain satisfying a certain transversality condition. Satake studied this problem in the weight 1 case in connection to the study of (algebraic) families of abelian varieties where the transversality condition is trivial. In this talk I will describe certain combinatorial structures at the Lie algebra level, called Hodge triples, which are generalisation of $\mathfrak{sl}(2)$ -triples and show how this structures provide a solution to the classification problem.