

Do there exist higher order geometries?

Dr. Ferit Ozturk

Bogazici University, Department of Mathematics

Let G_1 be the first jet space of diffeomorphisms of \mathbb{R}^n at 0 and G_2 be the space of their second jets. G_2 projects onto G_1 with kernel, say, K . Consider a subgroup G of G_1 and a subgroup V of K . We define $H^2(G,V)$ as the space of all subgroups of G_2 , each projecting onto G with kernel V modulo "splittings" of G_2 with respect to G_1 . In this talk, we will discuss the relation between the nontriviality of H^2 and the possibility of the existence of second order geometries.

This is an ongoing work with Ercüment Ortaçgil.