

The seminar on differential geometry will continue with this lecture:

**September 30, 10am, lecture room M5.**

**Omid Makhmali:**

### **Causal structures and related geometries**

Abstract:

A causal structure is defined by a field of tangentially nondegenerate projective hypersurfaces over a manifold, which is an extension of conformal pseudo-Riemannian structures. Using Cartan's method of equivalence, we will solve the local equivalence problem for causal structures, realize them as parabolic geometries and give a geometric interpretation of their fundamental invariants. We will focus on four dimensional causal structures and extend several twistorial constructions that arise in conformal geometry. This work is partly joint with W. Kry'nski.