

The seminar on differential geometry continued with **public habilitation lecture**:

**November 2, 11am, online on ZOOM.**

Record of the lecture is available via this [LINK](#).

**Yaroslav Bazaikin (Hradec Králové):**

### **On constructions of cohomogeneity one Spin(7)-holonomy Riemannian metrics**

Abstract:

An intrinsic property of a curved Riemannian manifold is the a priori non-commutativity of directional derivatives and, as a consequence, the dependence of the parallel translation operation on the chosen path on the Riemannian manifold. The holonomy group serves as a measure of this dependence and is a global object related to a Riemannian manifold that characterizes the deep properties of its geometry. In particular, in many important cases, the presence of a special holonomy group allows us to conclude that the Riemannian manifold is Einstein, which explains the importance of the concept of holonomy in applications to theoretical physics.

After getting familiar with the basic concepts of holonomy groups, the talk will give a survey of the author's results on constructions of examples of Spin(7)-holonomy Riemannian manifolds of cohomogeneity one, based on the geometry of 3-Sasakian manifolds.