

The seminar on differential geometry will continue with this lecture:

**May 17, 10am, online on MS Teams**

Join via this [LINK](#).

**Radoslaw Kycia (Masaryk university):**

**CoPoincare lemma and applications to physics**

Abstract:

I will outline the construction of the homotopy operator for codifferential defined on Riemannian manifolds. This notion can be used to solve, in a star-shaped open subset, many equations of mathematical physics including Dirac, Maxwell and string theory problems. I will also present an intriguing correspondence between (co)homotopy operator and Clifford algebra. I will also discuss various incarnations of spinors that appear in the literature. The talk is based on the draft [2] and [1].

[1]Radoslaw Kycia, The Poincare lemma, antiexact forms, and fermionic quantum harmonic oscillator, Results in Mathematics 75, 122 (2020)

[2] Radoslaw Kycia, The Poincare lemma for codifferential, anticoexact forms, and applications to physics, arXiv: 2009.08542 [math.DG]