

”The Trans-Carpathian Seminar on Geometry & Physics”

(See also the [Geometry & Physics @ DFT](#) seminar homepage)

Date: Wednesday, Dec. 3, 2025, 15:15 EET (Bucharest time)

Location: online via Zoom

Speaker: **Jakub Filipek** (FUW, Warszawa)

Title: **Twisted Abelian Differential Cohomology and Weakly Abelian Lie Groups**

Abstract: We develop the theory of differential cohomology with local coefficients. We formulate it within the axiomatic approach introduced by J. Simons and D. Sullivan. We prove de Rham theorem for invariant forms valued in local systems. We construct twisted differential characters, generalizing the original construction by J. Cheeger and J. Simons, and serving as a model for the twisted cohomology. We prove the essential uniqueness of the twisted character functor. Finally, we conjecture that twisted differential characters of arbitrary degree form a stack over the category of smooth connected based manifolds. We prove the assertion for degree-2 twisted differential characters.

The talk is planned for 2x45 min.