# PRAGUE-HRADEC KRALOVE SEMINAR ON COHOMOLOGY IN ALGEBRA, GEOMETRY, PHYSICS AND STATISTICS

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In this seminar we shall discuss topics concerning constructions and applications of cohomology theory in algebra, geometry, physics and statistics. In particular we shall discuss in first four seminars the relations between vertex algebras and foliations on manifolds, Gelfand-Fuks cohomology on singular spaces, cohomology of homotopy Lie algebras. The expositions should be accessible for all participants. All interested researchers and students are welcome!

The first meeting will be at 11 AM Wednesday October 3, at the conirna seminar room, ground floor, front building of the Institute of Mathematics of ASCR, Zitna 25, Praha 1.

On the first meeting Sasha Zuevsky shall give a lecture
"Vertex algebras and foliations associated to CFT correlation functions"
Abstract: We recall the notion of CFT/vertex operator algebras, their modules, construction of CFT correlation functions on Riemann surfaces of various genus, and their relations to modular forms. Using properties of vertex algebra intertwining operators and characters, we show how to construct a foliation associated to a grading-restricted vertex algebra. A short synopsis of the proof for coordinate-independence of the construction will be given. Finally, we will shortly discuss cohomology and characteristic classes of grading-restricted vertex algebras and corresponding foliations.