

Columbia University
Department of Mathematics

Joseph Fels Ritt Lectures

Spring 2011

"The Knizhnik-Zamolodchikov system and Polydifferentials"

The Knizhnik-Zamolodchikov system is named after the physicists who introduced it in 1984 in the context of conformal field theory.

Mathematicians like to understand this as a class of local systems essentially on moduli spaces of punctured rational curves. The search for an algebro-geometric interpretation as a Gauss-Manin system, which began in 1991 with the work of Schechtman-Varchenko, was recently completed, so that we may now regard this as a variation of (mixed) Hodge structure.

Underlying this approach is a realization of the highest weight representations of Lie algebras of Kac-Moody type in algebras of polydifferentials. The first lecture, which introduces both the KZ-system as well as the allied Wess-Zumino-Witten-system in genus zero, will be devoted to stating the main results. The second will focus on polydifferentials and Lie theory.

Dates

Thursday, February 3
Friday, February 4

Time

4:30 pm

Location

520 Mathematics Hall



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