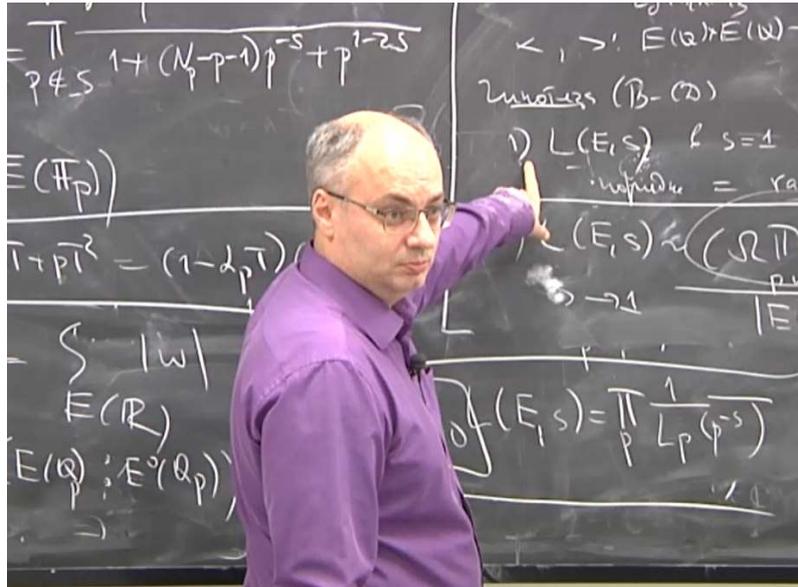


COLLOQUIUM

Thursday, October 28, 17:15

Zoom 958-115-833, room 104 (14th line V.O., 29)



Denis Osipov (MI RAS & NRU HSE)

Symbols and Reciprocity Laws

In arithmetic and algebraic geometry there is a local-to-global principle. Examples for this principle are reciprocity laws, for example, Gauss quadratic reciprocity law in arithmetic and Weil reciprocity law for tame symbols on an algebraic curve in algebraic geometry. The reciprocity laws state that the product over all points (or the sum over all points) of some locally computed invariants is 1 (or 0) on a projective curve. Another reciprocity law which is additive analog of Weil reciprocity law is that the sum of residues of rational differential form on a projective curve equals 0.

There is the Contou-Carrere symbol which generalizes the tame symbol, the residue of differential form and a lot of maps from arithmetic of algebraic curve over finite field (which come from class field theory). There is the reciprocity law for the Contou-Carrere symbol which covers a lot of classical reciprocity laws on projective algebraic curves. In my talk I will explain also how the Contou-Carrere symbol is generalized to the higher-dimensional algebraic varieties, where the points on curves are replaced by flags of irreducible subvarieties. In particular, the reciprocity laws of Kato and Parshin follow from reciprocity laws for the higher-dimensional Contou-Carrere symbol. The results of the talk on the higher-dimensional Contou-Carrere symbols are based on joint papers with Sergey Gorchinskiy and Xinwen Zhu.

Everyone is welcome!