
**Local combinatorial formulae for the Pontryagin classes of
triangulated manifolds**

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The talk will be devoted to the problem of computing the rational Pontryagin classes of a triangulated manifold from a local structure of the triangulation. The investigations in this problem were originated in a pioneer work by A. M. Gabrielov, I. M. Gelfand, and M. V. Losik (1975). Since then several different combinatorial formulae for the Pontryagin classes were obtained. As a rule such formulae work finely for triangulated manifolds with given smoothing, but face serious difficulties if a manifold is endowed with no additional structure. In 2004 the author proposed a new approach to the combinatorial computation of the Pontryagin classes of triangulated manifolds. This approach based on a new concept of a *universal local formula* allowed to obtain an explicit local combinatorial formula for the first Pontryagin class of an arbitrary combinatorial manifold. I also intend to discuss a recent progress in the problem of constructing local formulae for higher Pontryagin classes and a relation with the problem of constructing a combinatorial manifold with a prescribed set of links of vertices.