Transgression of the Euler class and arithmetic applications.

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Abstract

I will survey recent work (joint with N. Bergeron and P. Charollois) giving a new construction of certain cohomology classes of $\text{SL}_N(\mathbb{Z})$ that were first defined by Nori and Szcech. To motivate our approach, I will start by discussing the problem of how to compute linking numbers in certain three-manifolds that fiber over the circle, e.g. in the complement of the trefoil knot in the 3-sphere. We will see that these linking numbers are special values of $L$-functions, which implies that the latter are rational numbers. Then I will explain some generalizations that relate the topology of real locally symmetric spaces with the arithmetic world of modular forms.

Thursday, 31 January 2019
4:00 pm
Smith Hall 204
Tea and refreshments will be served at 3:45pm.

http://math.newark.rutgers.edu/~xiaowwan/Colloquium/