מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 261 ,Ziskind Building
on Wednesday, Nov 04, 2015
at 11:00

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The fusion products of representations of current algebras

Abstract:

The current algebra G[t] associated to a simple Lie algebra G is the Lie algebra of polynomial maps from complex plane to G. It is naturally graded with the grading defined by the degree of the polynomials. The fusion product, of Feigin and Loktev, is a graded G[t]-module, which is a refinement of the tensor product of finite dimensional cyclic G[t]-modules. More precisely, one starts with the tensor product of finite dimensional cyclic G[t]-modules, each localized at distinct points. It is again a cyclic G[t]-module generated by the tensor products of cyclic vectors. The graded module associated with the resulting cyclic module is defined to be the fusion product. Feigin and Loktev conjectured that the fusion product as a graded space is independent of the localization parameters for sufficiently well behaved modules. In this talk, we will see that this conjecture is true in most of the special cases.