



## Mathematics and CS Seminar

# Quivers with relations for symmetrizable Cartan matrices and semicanonical functions

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**Host: Tamas Hausel**

This is a report on an ongoing project with B. Leclerc and J. Schroeer. Our aim is to extend Lusztig's construction of a semicanonical basis for the enveloping algebra of the positive part of a symmetric Kac-Moody Lie algebra, which is in terms of the preprojective algebra of the corresponding quiver over the complex numbers, to the more natural case of symmetrizable Kac-Moody Lie algebras. To this end we study certain quivers, which usually contain loops, together with a potential and some nilpotency conditions. Most of the basic constructions carry over to this new setup with some modifications. In particular, the components of maximal dimension of our generalized nilpotent varieties have the structure of a  $B(\infty)$ -crystal of the corresponding type, and we can construct semicanonical functions associated to those components. To conclude, we would have to show that the constructible functions which have support with positive codimension, form an ideal. In the second part we can give some more details about the proofs and discuss the case  $B_2$ , which supports our conjecture.

**Thursday, April 26, 2018 01:00pm - 03:00pm**

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)



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