

# Representation Theory, Geometry & Combinatorics Seminar

Organizer: M. Haiman and N. Reshetikhin

Wednesday, 4:00–6:00pm, 939 Evans

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Sept. 9     **Alan Stapledon**, MSRI

*Arc Spaces and Equivariant Cohomology*

We present a new geometric interpretation of equivariant cohomology in which one replaces a smooth, complex  $G$ -variety  $X$  by its associated arc space  $J_\infty X$ , with its induced  $G$ -action. This not only allows us to obtain geometric classes in equivariant cohomology of arbitrarily high degree, but also provides more flexibility for equivariantly deforming classes and geometrically interpreting multiplication in the equivariant cohomology ring. Under appropriate hypotheses, we obtain explicit bijections between  $\mathbb{Z}$ -bases for the equivariant cohomology rings of smooth varieties related by an equivariant, proper birational map. As an application, we present a geometric  $\mathbb{Z}$ -basis for the equivariant cohomology ring of the general linear group acting on a point.