This is joint work with Evgeny Feigin and Markus Reineke.

We realize the degenerate flag varieties of type A, introduced by Evgeny Feigin, as a quiver Grassmannian of the following form $Gr_{(}dimA)(A + A*)$ where A is the path algebra of an equioriented quiver of type A. Recall that given a quiver Q and a f.d. Q-representation M, the quiver Grassmannian $Gr_e(M)$ is the projective variety consisting of all the subrepresentations of M of dimension vector e. This simple observation, lead us to a new interpretation of all the results obtained by Feigin (normality, loc. complete intersection, cell decomposition...) in terms of representation theory of Dynkin quivers. This allows us to extend the results of Feigin to a bigger class of projective varieties, namely the class of quiver Grassmannians of the form $Gr_{dimP}(P + I)$, where P is a projective representation of a Dynkin quiver and I is an injective one. I will illustrate these techniques and time permitting, I will also mention some of the last progresses.

The talk will be mostly based on the following paper:

GCI, E. Feigin, M. Reineke. 'Quiver Grassmannians and degenerate flag varieties', Algebra and Number Theory (2012), no.1, 165-194. arXiv: 1106.2399.