

THE SPRINGER CORRESPONDENCE AND RELATED TOPICS

In this talk, we will go over the definition of the Springer correspondence and see how perverse sheaves give a proof of it. We will also discuss how it relates to other topics in representation theory, and particularly emphasize its generalization due to Lusztig. I am currently working on a joint project with Martha Precup (North- western) and William Graham (UGA) that gives a new proof of the generalized Springer correspondence in the case of $G = SL_n(C)$, and I will talk briefly about this new construction. The talk is aimed to be accessible to an audience having taken a graduate level algebra course.