1125-51-2735 **Hiraku Abe*** (hirakuabe@globe.ocn.ne.jp), **Lauren DeDieu**, **Federico Galetto** and **Megumi Harada**. *Flat families of Hessenberg varieties with an application to Newton-Okounkov bodies.* Preliminary report.

Hessenberg varieties are subvarieties of the full flag variety. In this talk, I will concentrate on Lie type A. I will talk about a flat degeneration of a regular semisimple Hessenberg variety to a regular nilpotent Hessenberg variety whose special fiber is reduced, and I will explain how we can use this flat family to compute some Newton-Okounkov bodies of the Peterson variety of dimension 2. Along the way, we will also see that any regular nilpotent Hessenberg variety is a local complete intersection; this is a generalization of a result in Erik Insko's PhD thesis. This is a joint work with Lauren DeDieu, Federico Galetto, and Megumi Harada. (Received September 20, 2016)