

Title: Associated varieties and finite extension of vertex algebras

Abstract: Motivated by recent works joint with Tomoyuki Arakawa and Jethro Van Ekeren on collapsing levels, we conjectured that if W is a finite extension of a vertex subalgebra V , then the natural morphism between the corresponding associated varieties is dominant. In the case where W is a simple W -algebra and V is its simple affine vertex algebra, the conjecture is deeply related with the singularities of nilpotent Slodowy slices. In this talk, I will explain some results toward the conjecture and interesting examples. This is based on joint works in progress with Arakawa and Van Ekeren.