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***Title : On the description of orbit closure***

Summary : In this talk I will discuss the degeneration relation on the varieties of associative and Lie algebras. I will give a description of the orbit closure in terms of Gerstenhaber formal deformations, similar to the classical description of Grunewald and O'Halloran. I will show how this can be applied to recover the description of the orbit closure of 3-dimensional Lie algebras using homological algebra. I will also show that these ideas can be used to prove that the N-Koszul property of finite dimensional associative algebras is preserved under the degeneration relation.