

Local uniformization and essentially finite generation of valuation rings

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In this talk we will present the local uniformization problem and describe the related problem of essentially finite generation of valuation rings. We present a necessary condition in terms of classic invariants and conjecture that this condition is also sufficient. We describe some cases where this conjecture is satisfied. We also introduce the graded algebra associated to a valuation. We will briefly explain the importance of graded algebras, for instance on Teissier's program to solve the local uniformization. We show how the finite generation of graded algebras associated to valuation rings relate to the classic invariants describe before.