

LECTURE 9 (SUMMARY)

This lecture follows closely the material of Lecture 6 on the Scholze/Davies notes.

- (1) We mention some commutative algebra facts about regular local rings.
- (2) We explore the relation between smooth schemes over a field and regular schemes.
- (3) We mention the local criterion of flatness.
- (4) We apply the local criterion of flatness to show that smooth maps are equivalent to those maps that are flat, finitely presented and have smooth fibres.

1. REFERENCES FOR COMMUTATIVE ALGEBRA FACTS:

- Stacks project Tag 07NY (Regularity can be checked on completion)
- Stacks project Tag 00OF (Regularity can be checked faithfully flat locally)
- Stacks project Tag 0AFS (Regularity is preserved under localization)
- Stacks project Tag 00MK (Local criterion of flatness)