Arithmetic Schemes

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Abstract

Given a commutative ring with unity R, we can define an affine scheme by equipping the topological space Spec R with a structure sheaf of rings. When we consider spectra of rings that are finitely generated over $\mathbb{Z}$, we can establish a connection between algebraic geometry and number theory, via arithmetic schemes. In this seminar, I will exhibit the behaviours of one and two-dimensional arithmetic schemes by studying the fiber over a point $p \in \text{Spec } \mathbb{Z}$.

References

D. Eisenbud, J. Harris, *The Geometry of Schemes*, GTM 197, Springer-Verlag, New York, 2000.

R. Hartshorne, *Algebraic Geometry*, GTM 52, Springer-Verlag, New York, 1977.