Analytic Geometry

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Résumé

(joint with Dustin Clausen) Before the introduction of the general notion of schemes, algebraic geometry essentially dealt with algebraic varieties over a given field k, and coherent sheaves on them. Analytic geometry, concerned with complex-, real-, or p-adic rigid-analytic spaces is in a similar state: Finiteness conditions are critical to resolve the analytic and topological issues involved.

Recently, replacing topological modules by condensed modules, we have been able to define a general "derived category of quasicoherent sheaves" in all of these settings, and moreover replacing topological rings by condensed rings, we have been able to define a category of "analytic spaces" giving an analogue of the category of schemes in the setting of analytic geometry. The resulting theory naturally includes "derived analytic spaces" as well as arithmetic base rings like the subring of Z((T)) of series that converge on some small archimedean disc. We will give an overview of these developments.

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