Connections in algebraic geometry via tangent categories

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Abstract.

In this talk, we'll use the abstract formalism of tangent categories [1, 5] to compare and contrast different notions of connections in algebraic geometry. In particular, we'll show (i) how the definition of a "connection on a differential bundle in a tangent category" [2], when applied to the tangent category of affine schemes [3], exactly corresponds to the definition of a connection on a module [4, pg. 756], and (ii) how the definition of a "connection on a submersion in a tangent category", when applied to the tangent category of affine schemes, generalizes connections on a module, and seems to be a new concept in algebraic geometry.

This talk is based on joint work with JS Lemay and Eli Vandenburg (for i) and Marcello Lanfranchi (for ii).

References

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