Cohomological characterisation of monads

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Given a smooth projective variety X, a *monad* on X is a complex

$$M_{\bullet}: \quad 0 \longrightarrow A \xrightarrow[]{\alpha} B \xrightarrow[]{\beta} C \longrightarrow 0$$

of coherent sheaves on X, with α an injective map and β surjective. Monads were first introduced by Horrocks and have proved very useful objects for constructing vector bundles and studying their properties.

I will give a cohomological characterization of monads on algebraic varieties. As a main tool I will use a generalized version of Beilinson's spectral sequence. I will also give some examples of applications of this result.

This is work in progress.