Essential extensions, the nilpotent filtration and the Arone–Goodwillie tower

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Résumé en anglais	The spectral sequence associated to the Arone–Goodwillie tower for the n-fold loop space functor is used to show that the first two non-trivial layers of the nilpotent filtration of the reduced mod 2 cohomology of a (sufficiently connected) space with nilpotent cohomology are comparable. This relies upon the theory of unstable modules over the mod 2 Steenrod algebra, together with properties of a generalized class of almost unstable modules, which is introduced here. An important ingredient of the proof is a non-vanishing result for certain extension groups in the category of unstable modules modulo nilpotents.
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