ON SOME LOCAL COHOMOLOGY FILTRATIONS

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The goal of this talk is to construct certain filtrations of local cohomology modules, and to explain how to use them to obtain interesting information about such local cohomology modules. More precisely, on one hand, carrying over a Mayer–Vietoris type spectral sequence, we recover and extend the filtration produced by Àlvarez Montaner, García López and Zarzuela used to produce a closed formula for the computation of characteristic cycles of local cohomology modules supported on an arrangement of linear varieties; moreover, we also use this kind of filtrations to produce a closed formula for the so–called *generalized Lyubeznik numbers* recently introduced by Nuñez–Betancourt and Witt. On the other hand, building upon another completely different spectral sequence, we obtain filtrations of local cohomology supported on a maximal ideal, and we explain how to use them to provide several Hochster's type formulas, including the classical one for Stanley–Reisner rings, the recent one for Stanley toric face rings obtained by Brun, Bruns and Römer, and another new one for central arrangements of linear varieties.

The content of this talk is based on a joint work in progress with Josep Àlvarez Montaner and Santiago Zarzuela.

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*Partially supported by MTM2013-40775-P and by the CASB fellowship program.