

Department of Mathematics, BGU

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# Algebraic Geometry and Number Theory

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**On** *Wednesday, December ,14 2016*

**At** *15:10 – 16:30*

**In** *Math 101-*

Alberto Fernandez Boix (BGU)

will talk about

## **Local Cohomology Filtrations through Spectral Sequences**

Abstract:



**Ben Gurion University - Mathematics**  
**Algebraic Geometry and Number Theory Seminar**

*Speaker* **Alberto F. Boix (BGU)**

*Title* **Local Cohomology Filtrations through Spectral Sequences**

*Date* Wednesday, 14 December 2016

*Time* 15:10 - 16:30 (starts 15:10 sharp)

*Location* Room -101 in Building 58

*Abstract*

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. 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 decompositions, 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 certain 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.

(updated 23 Oct 2016)