

Seminar on Derived Categories and Applications ... (Winter 2006)

Suggested Bibliography

1. “**Catégories dérivées et foncteurs dérivés**” by **P.-P. Grivel** – in *Algebraic D-modules* by A. Borel (Ed.)
2. *Methods of Homological Algebra* by S. Gelfand and Y. Manin (Chpts. II-IV)
3. *Homological Algebra* by S. Gelfand and Y. Manin (Chpts. 2, 4, 5)
4. *Residues and Duality* by R. Hartshorne (Chpt. 1)
5. *Lectures on derived categories* by D. Miličić
<http://www.math.utah.edu/~milicic/dercat.pdf>
6. *Des Catégories Dérivées des Catégories Abéliennes* by J.-L. Verdier

Meeting time and location: Friday 12:00-1:30, in APM 7218.

Lecture Schedule

Week 2 –

Thursday (3:00pm) - “Motivation - complexes and special values of L-functions”

(*Cristian Popescu*)

Friday (12:00) - “Additive and Abelian Categories” (Sections II.5-II.6 in Gelfand and Manin [2].)

(*Maia Averett*)

Week 3 – Section 1 (Grivel) – The localization of a category.

(*Caleb Emmons*)

Week 4 – Section 2 (Grivel) – Triangulated Categories.

(*Barry Smith*)

Week 5 – Sections 3+4 (Grivel) – The category of complexes + The cone of a morphism.

(*Mark Colarusso*)

Week 6 – Section 5 (Grivel) - The homotopy category.

(*Jason Colwell*)

Week 7 – Section 6 (Grivel) - The derived category.

(*Wee Teck Gan*)

Week 8 – Sections 7+8 (Grivel) - The resolutions. + The “derived category of injective resolutions.”

(*Cristian Popescu*)

Week 9 – Sections 9, 10, 11 (Grivel) – Derived Functors. + The derived functors of Hom and Tens.

(*Orest Bucicovschi*)

Week 10 -

Thursday (3:00pm) Section 12 (Grivel) - The generating classes of the “bounded derived category.”

(*Peter Stevenhagen*)

Friday (12:00) - Section III.7 (Gelfand and Manin [2]) – Spectral Sequences.

(*Justin Roberts*)

