

# SINGULARITIES IN COMMUTATIVE ALGEBRA THROUGH COHOMOLOGICAL METHODS

Summer Graduate School, MSRI/SLMath, July 6 to 17, 2026

- [1] L. L. AVRAMOV, [Infinite free resolutions](#), in *Six lectures on commutative algebra* (Bellaterra, 1996) J. ELIAS, J. M. GIRAL, R. M. MIRÓ-ROIG, and S. ZARZUELA, eds., Progress in Mathematics **166**, Birkhäuser, Basel, Switzerland, 1998, ISBN 3-7643-5951-X. Reprinted in Modern Birkhäuser Classics. [Alternate link](#), pp. 1–118. [MR](#) [Zbl](#)
- [2] L. L. AVRAMOV and R.-O. BUCHWEITZ, [Support varieties and cohomology over complete intersections](#), *Invent. Math.* **142** (2000), no. 2, 285–318. [MR](#) [Zbl](#)
- [3] L. L. AVRAMOV, J. D. CHRISTENSEN, W. G. DWYER, M. A. MANDELL, and B. E. SHIPLEY (eds.), [Interactions between homotopy theory and algebra](#), Contemporary Mathematics **436**, American Mathematical Society, Providence, RI, 2007, ISBN 978-0-8218-3814-3. [MR](#) [Zbl](#)
- [4] B. BRIGGS, [Vasconcelos’ conjecture on the conormal module](#), *Invent. Math.* **227** (2022), no. 1, 415–428. [MR](#) [Zbl](#)
- [5] W. BRUNS and J. HERZOG, [Cohen–Macaulay rings](#), 2nd ed., Cambridge Studies in Advanced Mathematics **39**, Cambridge University Press, Cambridge, England, 1998, ISBN 0-521-41068-1. [MR](#) [Zbl](#)
- [6] D. EISENBUD, [Homological algebra on a complete intersection, with an application to group representations](#), *Trans. Amer. Math. Soc.* **260** (1980), no. 1, 35–64. [MR](#) [Zbl](#)
- [7] T. H. GULLIKSEN and G. LEVIN, [Homology of local rings](#), Queen’s Papers in Pure and Applied Mathematics **20**, Queen’s University, Kingston, ON, Canada, 1969. [MR](#) [Zbl](#)
- [8] H. MATSUMURA, [Commutative ring theory](#), 2nd ed., Cambridge Studies in Advanced Mathematics **8**, Cambridge University Press, Cambridge, England, 1989, ISBN 0-521-36764-6. [MR](#) [Zbl](#)
- [9] J.-E. ROOS (ed.), [Algebra, algebraic topology and their interactions: proceedings of the conference held at the University of Stockholm](#) (Stockholm, 1983), Lecture Notes in Mathematics **1183**, Springer, Berlin, Germany, 1986, ISBN 3-540-16453-7. [MR](#) [Zbl](#)
- [10] J. J. ROTMAN, [An introduction to homological algebra](#), 2nd ed., Universitext, Springer, New York, NY, 2009, ISBN 978-0-387-24527-0. [MR](#) [Zbl](#)
- [11] C. A. WEIBEL, [An introduction to homological algebra](#), Cambridge Studies in Advanced Mathematics **38**, Cambridge University Press, Cambridge, England, 1994, ISBN 0-521-43500-5; 0-521-55987-1. [MR](#) [Zbl](#)