

The (ir)regularity of Tor and Ext

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We investigated the asymptotic behavior of Castelnuovo-Mumford regularity of Ext and Tor, with respect to the homological degree, over complete intersection rings. We derive from a theorem of Gulliksen a linearity result for the regularity of Ext modules in high homological degrees. We show a similar result for Tor, under the additional hypothesis that high enough Tor modules are supported in dimension at most one; we then provide examples showing that the behavior could be pretty hectic when the latter condition is not satisfied.

References

- [1] MARC CHARDIN, DIPANKAR GHOSH AND NAVID NEMATI, *The (ir)regularity of Tor and Ext*, arXiv:1905.02375