1053-13-212   **Long Hai Dao*** (`hdao@math.ku.edu`), University of Kansas, Department of Mathematics, 405 Snow Hall, 1460 Jayhawk Blvd, Lawrence, KS 66044. *Complexities of (co)homology of pair of modules.* Preliminary report.

For a pair of finite modules over a local or graded ring we aim to investigate the asymptotic behavior of Hilbert polynomials of the Ext and Tor modules. This is the generalization of the Betti or Bass numbers, when one of the module is the residue field. We will discuss some partial results and open questions (partly joint with Oana Veliche and Branden Stone) (Received September 04, 2009)