

GORENSTEIN DIFFERENTIAL GRADED ALGEBRAS

A. Frankild

Gorenstein Differential Graded Algebras (DGAs) have been studied by Avramov and Foxby (1992) (the chain case), and Félix, Halperin and Thomas (1988) (the cochain case).

In recent papers with Peter Jørgensen (Danish Library of science and Medicine) we introduce a new class of Gorenstein DGAs which do not discriminate between chain and cochain DGAs. Moreover, we develop the notion of dualizing DG modules (these are DGA analogues of ordinary dualizing complexes over rings).

With Srikanth Iyengar (Missouri) and Peter Jørgensen we then showed that this new Gorenstein notion encompasses the class of Gorenstein DGAs studied by Avramov and Foxby, and Félix, Halperin and Thomas.

Furthermore, we give criterions to when (sufficiently nice) DGAs admits dualizing modules.

In this talk I will try to describe the infrastructure of this new theory on Gorenstein DGAs.