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On Constructions Related to the Generalized Taylor Complex

In this talk, we extend constructions and results for the Taylor complex to the generalized Taylor complex constructed by Herzog. We construct an explicit DG-algebra structure on the generalized Taylor complex and extend a result of Katthän on quotients of the Taylor complex by DG-ideals. We introduce a generalization of the Scarf complex for families of monomial ideals, and show that this complex is always a direct summand of the minimal free resolution of the sum of these ideals. We also give an example of an ideal where the generalized Scarf complex strictly contains the standard Scarf complex.