# NON-SIMPLY CONNECTED RATIONAL HOMOTOPY THEORY AND DIFFERENTIAL GRADED CATEGORY

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Extensions of rational homotopy theory of Quillen and Sullivan to non-simply connected spaces have been considered by some people. Katzarkov–Pantev–Toën [2] and Pridham [3] introduced a $\pi_1$-equivariant commutative differential graded algebra (CDGA) consisting of twisted differential (or polynomial) forms with coefficients in a large semi-simple local system. This equivariant CDGA has much richer information than the usual de Rham algebra for non-simply connected (or non-nilpotent) spaces, and admits a notion of minimal model which has very similar nature to Sullivan's minimal model. In this talk, we will see how a differential graded category (DGC) of local systems can be used to extract information such as twisted cohomology and the action of $\pi_1$ on the rational homotopy groups from the equivariant CDGA and give explicit description of the equivariant minimal model for some examples of spaces. In the former part, we introduce the $\pi_1$-equivariant CDGA and the DGC and see the relation among them and homotopy invariants. In the latter part, we give examples. Especially, we give the $\pi_1$-equivariant CDGA corresponding to a non-nilpotent version of an example in another extension of the theory due to Gómez-Tato–Halperin–Tanré [1]. This talk is based on [4, 5].

## References

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