



Van den Bergh isomorphisms in string topology

Submitted by Emmanuel Lemoine on Thu, 12/05/2013 - 15:33

Titre Van den Bergh isomorphisms in string topology

Type de publication Article de revue

Auteur Menichi, Luc [1]

Pays Suisse

Editeur EMS Publishing House, ETH-Zentrum FLI C4

Ville Zurich

Type Article scientifique dans une revue à comité de lecture

Année 2011

Langue Anglais

Date 2011

Numéro 1

Pagination 69 - 105

Volume 5

Titre de la revue Journal of Noncommutative Geometry

ISSN 1661-6960

Mots-clés

Batalin-Vilkovisky algebra [2], Calabi-Yau algebra [3], derived bracket [4], free loop space [5], Hochschild cohomology [6], Poincaré duality group [7], String topology [8], Van den Bergh duality [9]

Résumé en anglais

Let M be a path-connected closed oriented d -dimensional smooth manifold and let k be a principal ideal domain. By Chas and Sullivan, the shifted free loop space homology of M , $H_{*+d}(LM)$ is a Batalin-Vilkovisky algebra. Let G be a topological group such that M is a classifying space of G . Denote by $S_*(G)$ the (normalized) singular chains on G . Suppose that G is discrete or path-connected. We show that there is a Van Den Bergh type isomorphism

$$HH^{-p}(S_*(G), S_*(G)) \cong HH_{p+d}(S_*(G), S_*(G)).$$

Therefore, the Gerstenhaber algebra $HH_*(S_*(G), S_*(G))$ is a Batalin-Vilkovisky algebra and we have a linear isomorphism

$$HH_*(S_*(G), S_*(G)) \cong H_{*+d}(LM).$$

This linear isomorphism is expected to be an isomorphism of Batalin-Vilkovisky algebras. We also give a new characterization of Batalin-Vilkovisky algebra in terms of the derived bracket.

URL de la notice <http://okina.univ-angers.fr/publications/ua160> [10]

DOI 10.4171/JNCG/70 [11]

Lien vers le document <http://hal.archives-ouvertes.fr/hal-00403688> [12]

Liens

[1] <http://okina.univ-angers.fr/luc.menichi/publications>

[2] [http://okina.univ-angers.fr/publications?f\[keyword\]=19854](http://okina.univ-angers.fr/publications?f[keyword]=19854)

- [3] [http://okina.univ-angers.fr/publications?f\[keyword\]=19861](http://okina.univ-angers.fr/publications?f[keyword]=19861)
- [4] [http://okina.univ-angers.fr/publications?f\[keyword\]=19858](http://okina.univ-angers.fr/publications?f[keyword]=19858)
- [5] [http://okina.univ-angers.fr/publications?f\[keyword\]=19857](http://okina.univ-angers.fr/publications?f[keyword]=19857)
- [6] [http://okina.univ-angers.fr/publications?f\[keyword\]=19856](http://okina.univ-angers.fr/publications?f[keyword]=19856)
- [7] [http://okina.univ-angers.fr/publications?f\[keyword\]=19860](http://okina.univ-angers.fr/publications?f[keyword]=19860)
- [8] [http://okina.univ-angers.fr/publications?f\[keyword\]=19855](http://okina.univ-angers.fr/publications?f[keyword]=19855)
- [9] [http://okina.univ-angers.fr/publications?f\[keyword\]=19859](http://okina.univ-angers.fr/publications?f[keyword]=19859)
- [10] <http://okina.univ-angers.fr/publications/ua160>
- [11] <http://dx.doi.org/10.4171/JNCG/70>
- [12] <http://hal.archives-ouvertes.fr/hal-00403688>

Publié sur *Okina* (<http://okina.univ-angers.fr>)