

INFORMATION
ON THE NEW CONTRIBUTIONS OF DOCTORAL THESIS

(Information will be posted on the Website)

Title: **Some problems about the modulo p Lannes-Zarati homomorphism**
Speciality: **Algebra and number theory** Code No.: **9460104**
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Course: **4 (2016-2020)**
Advisors:
 1. Advisor 1: Assoc. Prof. Dr. Phan Hoang Chon
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Training institution: **Quy Nhon University**

NEW CONTRIBUTIONS OF THE THESIS

1. The author has explicitly established a chain-level representation of duality of the modulo p Lannes-Zarati homomorphism in Singer-Hung-Sum chain complex as well as a chain-level representation of the modulo p Lannes-Zarati homomorphism in the Lambda algebra, for p odd prime.
- 2 The author identifies the behavior of the modulo p Lannes-Zarati homomorphism with p odd for trivial module \mathbb{F}_p at homology degrees $1, 2, 3$, and for the reduced cohomology of $B\mathbb{Z}/p$ at homology degrees $0, 1$.
3. With a few modifications to degree, the method used by the author in the thesis to research for the odd p case can also be applied to the case $p = 2$. Then, the author has proved the published results on the behavior of the modulo 2 Lannes-Zarati homomorphism for trivial module \mathbb{F}_2 at homology degrees $s, 1 \leq s \leq 5$ and for the reduced cohomology of $B\mathbb{Z}/2$ at homology degrees $s, 0 \leq s \leq 4$ and identified a kernel and image part of the modulo 2 Lannes-Zarati homomorphism for trivial module \mathbb{F}_2 at homology degrees 6. This is a new result.

The above results are completely new and positively contribute to the research direction about the cohomology of Steenrod algebra in particular and algebraic topology in general. They have scientific significance, are topical and are interested by many authors in the research field of the thesis.

Binh Dinh, March 10, 2021

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