

Memories of Kato Seminar from 1976 to 1978

Masayuki Yamasaki
(Okayama University of Science)

Bousfield classes form a set:
a workshop in memory of Tetsusuke Ohkawa

Vita of Dr. Tetsusuke Ohkawa

1967–1970: Kanazawa University Senior High School



T. Ohkawa



T. Ohsawa

1970–1974: Dept. of Math., Univ. of Toyama

1974–1976: Master's Course, Grad. Sch. of Univ. of Tokyo

Master's Thesis:

Groups with finite dimensional $K(\pi, 1)$

1976–78: Doctor's Course, Grad. Sch. of Univ. of Tokyo

He moved to Hiroshima University as an assistant professor.

He obtained a D.Sci. degree in 1991 from Hiroshima U.

Doctoral Thesis (Feb. 1991):

*A vanishing theorem of the Araki-Yoshimura
-Bousfield-Kan spectral sequences*

In the autumn of 1975, Sadayoshi Kojima and I started to go to Komaba Campus of UT to attend Kato Seminar every Saturday. (Prof. Kato was to become our advisers in April, 1976.)

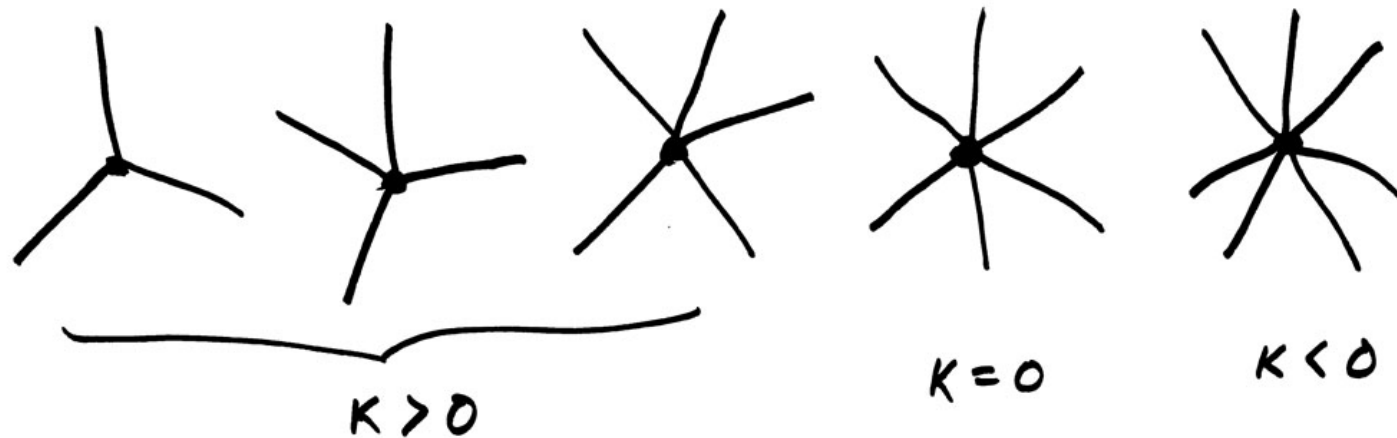
Later Ohkawa-san and Makoto Yamamoto (Waseda U.) and other people joined the seminar. The seminar started around 10 am and ended around 5 pm.

Prof. Kato had a lodge near Azumino, and during the holidays we stayed in his lodge and had seminars there. In winter, we usually enjoyed skiing during the daytime, and had seminars in the evening. Sadayoshi and Makoto were experts of skiing, and they gave lessons to Ohkawa-san and me, but we were rather poor students.

Ohkawa-san's Early Works in Low Dimensional Topology

(1) 2-dimensional complexes and $K(\pi, 1)$'s

— A simplicial complex which does not contain a cone of positive curvature is aspherical.



— A partial solution to a problem of J. H. C. Whitehead (“Is a subcomplex of an aspherical complex aspherical?”)

(2) Separation problem of 2-spheres in 4-manifolds and link invariants

- When can elements $x_1, \dots, x_n \in \pi_2(M^4)$ be represented by mutually disjoint embeddings of S^2 ?
- Relations with Milnor's $\bar{\mu}$ invariants
- See recent works of Teichner and his (former) students.

Teichner's talk "*Iterated Disk Constructions in 4-Manifold Topology*" at the 50th Cornell Topology Festival (2012)



Peter Teichner: Iterated Disk Constructions in 4-Manifold Topology

ADDED JUNE 1, 2012

MR1771432 Reviewed Matumoto, Takao; Ohkawa, Tetsusuke On epimorphisms and monomorphisms in the homotopy category of CW complexes. *Japan. J. Math. (N.S.)* 26 (2000), no. 1, 153–156. (Reviewer: Akrur Behera) [55U35](#) ([18B99](#))

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

MR1612810 Reviewed Ohkawa, Tetsusuke A remark on homology localization. *Hiroshima Math. J.* 28 (1998), no. 1, 1–5. (Reviewer: George Peschke) [55P60](#) ([55P10](#))

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

MR1211768 Reviewed Ohkawa, Tetsusuke A vanishing theorem of Araki-Yosimura-Bousfield-Kan spectral sequences. *Hiroshima Math. J.* 23 (1993), no. 1, 1–14. (Reviewer: Donald M. Davis) [55T25](#)

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

MR1035147 Reviewed Ohkawa, Tetsusuke The injective hull of homotopy types with respect to generalized homology functors. *Hiroshima Math. J.* 19 (1989), no. 3, 631–639. (Reviewer: John F. Oprea) [55P42](#) ([55P60](#))

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

MR0676552 Reviewed Ohkawa, Tetsusuke The pure braid groups and the Milnor $\bar{\mu}$ -invariants of links. *Hiroshima Math. J.* 12 (1982), no. 3, 485–489. (Reviewer: J. S. Birman) [57M25](#) ([20F36](#))

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

MR0649761 Reviewed Ohkawa, Tetsusuke Homological separation of 2-spheres in a 4-manifold. *Topology* 21 (1982), no. 3, 297–313. (Reviewer: Roger Fenn) [57Q45](#) ([57N13](#))

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

MR0558682 Reviewed Kato, Mitsuyoshi; Kojima, Sadayoshi; Ohkawa, Tetsusuke; Yamasaki, Masayuki The Matsumoto tripling for compact simply connected 4-manifolds. *Tôhoku Math. J. (2)* 31 (1979), no. 4, 525–535. (Reviewer: Michael Freedman) [57N65](#)

[PDF](#) | [Clipboard](#) | [Journal](#) | [Article](#)

検索

Kyoto University Research Information Repository >

著者: "大川, 哲介"

[「ブラウズ: 著者」画面に戻る](#)

[タイトル順ソート](#) [日付順ソート](#)

アイテム表示: 1-8 / 8.

書誌情報	ファイル
2次元単体複体に対するCartanの定理のAnalogy (3次元4次元における幾何学的トポロジーの研究) 大川, 哲介 (1976-04) 数理解析研究所講究録, 268: 69-74	
2次元 $K(\pi, 1)$ について (特異点の幾何学) 大川, 哲介 (1976-10) 数理解析研究所講究録, 283: 52-57	
Cable Knots of Fibred Knots are Fibred (多様体に於ける低次元トポロジーの問題) 大川, 哲介 (1977-10) 数理解析研究所講究録, 309: 80-85	
Higher Separating of Links (結び目と3次元多様体) 大川, 哲介 (1979-02) 数理解析研究所講究録, 346: 80-87	
$\pi_2(M^4)$ のElementsのSeparating Problem (3次元多様体の構造と位置の問題) 大川, 哲介 (1979-11) 数理解析研究所講究録, 369: 122-127	
Pure Braid GroupsとMilnor $\bar{\mu}$ 不変量 (低次元多様体の構造と分類について) 大川, 哲介 (1981-02) 数理解析研究所講究録, 417: 100-105	
入射的加群のアナロジーとしての h_{\ast} : 入射的スペクトラムについて (代数的位相幾何学の現状と展望) 大川, 哲介 (1992-04) 数理解析研究所講究録, 781: 129-131	
半局所化について (代数的トポロジーの発展と展望) 大川, 哲介 (1993-05) 数理解析研究所講究録, 838: 50-54	

“RIMS Kôkyûroku” articles in low dim topology

2次元単体複体に対するCartanの定理のAnalogy (3次元4次元における幾何学的トポロジーの研究)

大川, 哲介 (1976-04)

数理解析研究所講究録, 268: 69-74



2次元 $K(\pi, 1)$ について (特異点の幾何学)

大川, 哲介 (1976-10)

数理解析研究所講究録, 283: 52-57



Cable Knots of Fibred Knots are Fibred (多様体に於ける低次元トポロジーの問題)

大川, 哲介 (1977-10)

数理解析研究所講究録, 309: 80-85



Higher Separating of Links (結び目と3次元多様体)

大川, 哲介 (1979-02)

数理解析研究所講究録, 346: 80-87



$\pi_2(M^4)$ のElementsのSeparating Problem (3次元多様体の構造と位置の問題)

大川, 哲介 (1979-11)

数理解析研究所講究録, 369: 122-127



Pure Braid GroupsとMilnor $\bar{\mu}$ 不変量 (低次元多様体の構造と分類について)

大川, 哲介 (1981-02)

数理解析研究所講究録, 417: 100-105



Words of Ohkawa-san (1)

In 2013, Ohkawa-san was invited as a commentator to a small meeting in Okayama. The following are two of his comments to the speakers and quotes from his email message which I received the next day.

O. “The people who gave talks on analysis were too busy in writing down formulas and equations, they didn’t have time to write *a single Japanese word* on the blackboard!”

— Atually every field of mathematics is full of papers that contain only computations. For example,

Words of Ohkawa-san (2)

X. (as a reply to a question of O.) “I am not working on that problem, because there seem to be no tools available”

O. “Why don’t you try to make **your own tool**?”

— X is one of many Japanese who do not try to create their own mathematics, following established people. . . .