

September 2021

Personal Memories of Hiroshi Kunita

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Recommended Citation

Elworthy, David (2021) "Personal Memories of Hiroshi Kunita," *Journal of Stochastic Analysis*: Vol. 2 : No. 3 , Article 2.

DOI: 10.31390/josa.2.3.02

Available at: <https://digitalcommons.lsu.edu/josa/vol2/iss3/2>

PERSONAL MEMORIES OF HIROSHI KUNITA

DAVID ELWORTHY*

Dedicated to the memory of Professor Hiroshi Kunita

It was very sad last year to hear that Professor Kunita had passed away. The man with the lovely smile is how my wife refers to him.

The first time I met him must have been at David Williams' 1980 Durham Symposium on Stochastic Integrals. I was very much in awe of him and S. Watanabe for their legendary work on martingale calculus, though in Durham he talked about his more recent work on decomposition of SDEs and their flows.

I got to know him better at the first Warwick Symposium Year on Stochastic Differential Equations in 1984/85 and from subsequent visits here and in Japan. In 1985 he stayed at Warwick for several weeks as also did several other senior, indeed "legendary", Japanese stochastic analysts. They made a major contribution to the success of the Symposium and started up, and drove, a long period of UK-Japanese collaboration in stochastic analysis which still bears fruit today. I have a lot to be grateful to them for. Professor Kunita's talks in 1985 were on limit theorems for sde and stochastic flows.

After 1985 I visited him several times in his home university, Kyushu University in Fukuoka, in the southern main island of Japan. These were usually for short visits, seminars, or workshops, often combined with visits to Professor Ogura at nearby Saga University. Kunita was very hospitable and appeared to enjoy taking his visitors to see the beauty of the areas of Kyushu within easy reach of Fukuoka. I got to love the spectacularly beautiful coast line, not to mention the sea food there; as well as the tourist area of the volcano Mount Aso and its surroundings. I have many photographs of Professor Kunita and various visitors close to the rim of the volcano, with various degrees of volcanic activity evident.

He was to me a quiet, gentle, and charming person, devoid of ostentation. He gave the impression of loving the outdoors and enjoying the natural environment. I recall that during his 1985 stay here he very much enjoyed a train excursion he made along the West of Scotland.

In 1997 he organised a "Special month of Kyushu Seminar" as a major part of a project he led on "Geometry of Stochastic Differential Equations" with members Terry Lyons, Wilfrid Kendall, and myself, and Setsuo Taniguchi, and Hiroshi Sugita. It included two workshops and was an exciting, fruitful and enjoyable few weeks. His retirement three years later from Kyushu seemed like the end of an era,

Received 2021-1-31; Accepted 2021-7-12; Communicated by S. Aida, D. Applebaum, Y. Ishikawa, A. Kohatsu-Higa, and N. Privault.

2010 *Mathematics Subject Classification*. Primary 01Axx; Secondary 60Hxx, 58J65.

Key words and phrases. stochastic analysis, Itô school.

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but it was not really so. A particularly pleasant memory of him later in Fukuoka was when I was included in a group of participants at a workshop who he took to lunch at the Italian restaurant where his son was chef. His son had been trained in Italy; obviously very well!

After Kyushu University he worked at Nanzan University, a private university with a later retirement age. I was shocked at what seemed to me to be a very heavy teaching/administration load there. However his attitude appeared to be of acceptance that the work had to be done and it was his time of life to do it. In any case it was during this time that he must have done his work with Y. Ishikawa leading to their important 2006 paper on Malliavin calculus on the Wiener-Poisson space.

When he finally retired from Nanzan University in 2006, he told me he was very happy indeed to be able to spend a lot of time being a grandfather. Nevertheless he continued to produce interesting mathematics. His last visits to Warwick were to a Workshop in April 2012 when he talked on “Non-degenerate SDE with jumps and its hypoelliptic property” and finally to a UK-Japan “Winter School” in May 2014 when, seemingly as young and fit as ever, he talked on “Stochastic flows and adjoint processes” .

It is sad not to be seeing, talking, or listening to him again, but I consider myself very fortunate to have been able to spend time with him. His mathematics lives on, together with a wide international mathematical legacy, as does the memory of him and his smile.

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