

## Catalog Database of Yukawa-Tomonaga-Sakata Memorial Archives

湯川・朝永・坂田記念史料のカタログ・データベース

Yoshinobu Takaiwa<sup>1</sup>, Haruyoshi Gotoh<sup>2</sup>, Michiji Konuma<sup>3</sup>, Kenji Ito<sup>4</sup>, Chusei Namba<sup>5</sup>,  
Taichi Kugo<sup>6</sup>, Sho Tanaka<sup>7</sup>, Masako Bando<sup>8</sup>, Kazuyuki Ito<sup>9</sup>,  
Kazuyuki Kanaya<sup>10</sup>, Fumihiko Ukegagawa<sup>10</sup>, Masaharu Tanabashi<sup>11</sup>,  
Koichi Yamawaki<sup>11</sup>, Tadashi Yoshikawa<sup>12</sup>, Tadash Nishitani<sup>13</sup>

高岩義信<sup>1</sup>, 五島敏芳<sup>2</sup>, 小沼通二<sup>3</sup>, 伊藤憲二<sup>4</sup>, 難波忠清<sup>5</sup>, 九後太一<sup>6</sup>, 田中正<sup>7</sup>, 坂東昌子<sup>8</sup>,  
伊藤和行<sup>9</sup>, 金谷和至<sup>10</sup>, 受川史彦<sup>10</sup>, 棚橋誠治<sup>11</sup>, 山脇幸一<sup>11</sup>, 吉川直志<sup>12</sup>, 西谷正<sup>13</sup>

<sup>1</sup>Tsukuba U. Tech., <sup>2</sup>Kyoto U.(Museum), <sup>3</sup>Kanagawa Dental Coll., <sup>4</sup>Sokendai, <sup>5</sup>NIFS,  
<sup>6</sup>Kyoto U.(YITP), <sup>7</sup>Kyoto U., <sup>8</sup>Aichi U., <sup>9</sup>Kyoto U.(History),  
<sup>10</sup>U. Tsukuba (Phys.), <sup>11</sup>Nagoya U.(KMI), <sup>12</sup>Nagoya Women's U., <sup>13</sup>Kikuchi Coll. Optometry  
<sup>1</sup>筑波技術大, <sup>2</sup>京大総合博物館, <sup>3</sup>神奈川歯科大, <sup>4</sup>総研大, <sup>5</sup>核融合研, <sup>6</sup>京大基研, <sup>7</sup>京大,  
<sup>8</sup>愛知大, <sup>9</sup>京大文, <sup>10</sup>筑波大物理, <sup>11</sup>名大KMI, <sup>12</sup>名古屋女子大, <sup>13</sup>キクチ眼鏡専門学校

Yukawa, Tomonaga, and Sakata memorial archives are explained, and the status of the project of a Grants-in-Aids for Scientific Research (Kakenhi) performed by the authors in which the study of those archival libraries and making of their databases is given. Considering the important roles they played in early days of nuclear physics research in Japan and some administrative works for academic societies under the framework of Japan Science Council and also some government committees, they may contain important and interesting documents related to the emergence of fusion research in Japan.

## 1. Introduction

Some historical documents left by Hideki Yukawa, Sin-itiro Tomonaga, and Shoichi Sakata have been preserved and archived at Yukawa Hall Archival Library (YHAL), YITP, Kyoto Univ.[1], Tomonaga Memorial Room (TMR), Univ. of Tsukuba[2], and Sakata Memorial Archival Library (SMAL), Physics Dept., Nagoya Univ.[3], respectively, which are collectively referred as memorial archives in this paper hereafter. These three great physicists worked on very similar fields in physics, namely, theoretical nuclear and particle physics, and also shared social relations in their academic environment, and therefore it is expected that studying their archival materials in a unified manner may give abundant information in many aspects than doing individually. In this context, a grants-in-aid for scientific research (Kakenhi) was awarded for three years from April 2008 to the project of studying the archival documents and making the databases of their descriptive data (finding-aids) which were planned to be made public on completion of the project. In this paper, the status of the project is reported, and some interesting information about the early stage activities of fusion science research in Japan in which these three physicists might played key roles.

## 2. Memorial Archives

This section describes summary of each memorial archives: historical description, quan-

ties, and some contents of the documents. All of them started to preserve documents after Japan-US Collaborative workshops held in 1978-1979, by a stimulating suggestion by L. M. Brown noticing importance of the activities on particle physics pioneers of Japan in the context of science history of particle physics. The discussion made there will be found in the proceedings[4].

### 2.1 Yukawa — YHAL

Yukawa's archives started by looking for document of his activities. In addition to the materials left in his office at Yukawa Hall, large amount of documents were found at Physics Department building of Science Faculty where he kept old documents well back to 1930's including drafts memos and letters from Tomonaga on his famous work on the source of nuclear force, mesotron ( $\pi$  meson). The catalog list of the documents was prepared and published by R.Kawabe but in 2000 the middle of the work he passed away. After this cataloging work has been stopped. Originally Kawabe's catalog was published as a series of articles in "Soryushiron-Kenkyu 「素粒子論研究」", and they are bundled in one volume now and available online[5].

### 2.2 Tomonaga — TMR

Tomonaga Memorial Archives was founded by donation from Tomonaga's family after his death. The University of Tsukuba started to setup a memorial room dedicated to his achieve-

ment in physics and his career as the former President of its setup a memorial room dedicated to his achievement in physics and his career as the former President of its predecessor university. By S.Kamefuch and others prepared the room for exhibition of Tomonaga's historical documents. After a while, some other documents were added by donation of some persons closely related to Tomonaga. The documents were maintained only with a simple list for internal use, and it has been thought desirable to have a database of documents for long time.

### 2.3 Sakata — SMAL

Sakata deceased while he was still a professor of Nagoya University. It was planned to publish a collection of his work and some documents of his work had been collected and kept in his office. After this the physics department decided to preserve his office and the collected documents were left untouched and in commemoration of his contribution to physics and the department of physics, which means that the office functions as an archives of the department to include not only Sakata's documents but also other physicists of the department. S.Ogawa contributed to make catalog list of the documents in two volumes and then he deceased leaving some parts of the documents unlisted.

### 3. Database

These are the situations of the memorial archives when the Kakenhi project started. The project started to look at listed and unlisted documents, and converting into databases with similar format and structure. To add unlisted documents into database, considering hierarchy structure inherent to the archival materials, the description started from higher hierarchy level, collections, down to lower ones, boxes, files (folders), and items. By this principle, overview of the archival documents can be understood first and detailed information may be added later, if time and resource are available. And the situation when the Kakenhi project finished has been summarized in a booklet[6].

The database was made using commercial software *Filemaker Pro* with the structure (field definitions) conforming with international standards of archival description, such as ISAD(G) of ICA[7] and, if it must be converted it to online capable form, with EAD[8].

### 4. Internet Server

For the internet server a candidate is now under serious investigation with free open-software. It will be soon available for public access[9]. When it is convinced that the server with this system works fine as expected, it may be possible to add more database contents of other archives with similar database forms.

### 5. Historical Documents of Fusion Research in Japan

It is known that some people started the fusion research at Yukawa Institute, and also Yukawa was a committee member for Fusion Research of Japan Science Council. There found some meeting minutes of such committees in the Yukawa memorial archives. Also, Sakata was discussing about nuclear power development and once participated a kind of such committees. It is known that he criticized that enough information were not given to those committees, and it made him quit as a committee member.

Details and background information of such story may be found if the related documents are looked for in these memorial archives and the search is done in not a single but many archives, some unknown contexts and facts may be revealed.

### References

- [1] [http://www.yukawa.kyoto-u.ac.jp/contents/about\\_us/yukawa/](http://www.yukawa.kyoto-u.ac.jp/contents/about_us/yukawa/) ...
- [2] <http://tomonaga.tsukuba.ac.jp>
- [3] <http://www.eken.phys.nagoya-u.ac.jp/introduction/sakata/sakata-j.html/> ...
- [4] Ed. L.M.Brown, K.Rokuo, M.Konuma, Z.Maki, Prog. Theor. Phys. Supplement, **105** (1991).
- [5] "YHAL Resources Hideki Yukawa (I)-(VIII), <http://www.yukawa.kyoto-u.ac.jp/PDF/YTarchiveR070508.pdf> ...
- [6] K.Kanaya and Y.Takaiwa, "Archival Documents Left by Yukawa, Tomonaga, and Sakata", Tsukuba University of Technology, 2011. <http://arcadia.k.tsukuba-tech.ac.jp/yts-memorial-archives/> ...
- [7] [http://www.icacds.org.uk/eng/ISAD\(G\).pdf](http://www.icacds.org.uk/eng/ISAD(G).pdf)
- [8] <http://www.loc.gov/ead/>
- [9] <http://yhal.yukawa.kyoto-u.ac.jp/archon/> (in preparation)