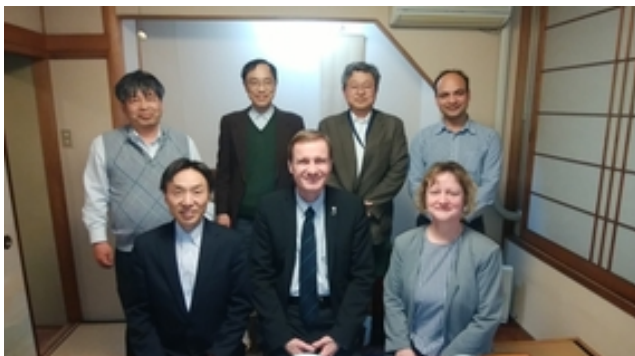


Japan (Asia) and Germany (Europe)“ (https://gjsss.org/?page_id=42).

Insgesamt habe ich eine wissenschaftlich sehr anregende Zeit in Osaka verbracht. Der Toyonaka-Campus der Osaka University, wo ich untergebracht war, ist sehr gut gelegen, überhaupt ist mir Osaka mittlerweile ans Herz gewachsen. Einige Eindrücke und Fotos von Osaka finden Sie in meinem Blog „Kimi und Elchi in Japan: Osaka“, der vor allem für unsere Austauschstudenten gedacht ist, aber auch für alle, die sich für Geschichte und Kultur Japans interessieren (<http://kimiandelchi.blogspot.com/2018/>).

BRIDGE Program: Building Bridges and Creating Networks – A Report

by club member Dr. Erik Bründermann,
Honorable Guest Professor of
Shizuoka University



Meeting on the evening of the lecture with host Prof. Hiromoto (front, from left to right: E. Bründermann, I. Bründermann) and Professors of Shizuoka University (back, from left to right: Prof. Ishida, Prof. Inokawa, Prof. Kondo, Prof. Tripathi) (Photo: Norihisa Horimoto)

The author had the honor to visit his host Dr. Iwao Hosako again from March 14 to April 27, 2018 as part of the BRIDGE program. In addition, a meeting with the professors of Shizuoka University in Hamamatsu took place from March 21 to 27, 2018, including Prof. Norihisa Hiromoto, who also supported the BRIDGE proposal, and Prof. Hiroshi Inokawa, Akihiro Ishida, Hiroaki Satoh and Saroj Raman Tripathi.

During the stay, the author gave a lecture at the *Graduate School of Science and Technology* (GSST). The stay could be planned in such a way

that the participation in the 6th German-Japanese University Presidents' Conference, “*Enhancing social impact and visibility through the next phase of collaboration*”, in the HeKKSaGOn University Consortium in Osaka from April 12th to 13th, 2018 was possible. Students had the opportunity to learn more about the 17 United Nations (UN) goals for sustainable development. One participant, a Japanese student from Kyoto University, had previously been with the author for her internship of several weeks at KIT. The respective Karlsruhe Institute of Technology (KIT) International Office and Kyoto University arranged this exchange. The consortium comprises three German and three Japanese universities (Heidelberg, Kyoto, Karlsruhe, Tohoku, Göttingen, and Osaka).



Lecture at the *Graduate School of Science and Technology* in Hamamatsu, Shizuoka University, during the BRIDGE stay (Photo: Norihisa Horimoto)

The BRIDGE funding also made it possible to present the research work at the HeKKSaGOn *Multi-disciplinary Joint Workshop toward Fusions between Data and Mathematical Sciences* on April 11th in Osaka to develop research collaborations between mathematics and data science for innovative applications in robotics, big data, and data-bility. In this network, the author is a member of the *Data Science* working group, which deals with artificial intelligence, among other things.



Symbolic object of the six universities in the HeKKSaGOn consortium, created during the 6th German-Japanese University Presidents' Conference. The author's participation in the conference was made possible through the BRIDGE program. (Photo: E. Bründermann)

Background and History

The author has agreed with his Japanese hosts on a broad and long-term research topic. It covers timing, synchronization, stability and reliability of information and communication technology systems as well as accelerator technology, considering lasers. Within the framework of an *Invitation Fellowship for Research in Japan*, awarded by the *Japan Society for the Promotion of Science* (JSPS), the author was able to conduct research in Japan from October 4th to December 2nd 2016. Host was Dr. Iwao Hosako, Director General of the *Advanced ICT Research Institute* of the *National Institute of Information and Communications Technology* (NICT) in Koganei, Tokyo.

The NICT is responsible for the distribution and maintenance of *Japan Standard Time* (JST). The NICT *Internet Time Service* allows users to synchronize their computers to this standard time. In addition to research work at the NICT, the stay also allowed the preparation of long-term collaborations. In 2015, before the start of the research stay, a *Memorandum of Understanding* (MOU) between KIT and Shizuoka University and, during the stay in 2016, also an MOU with NICT was signed by the presidents of the respective institutions.

Results

In 2017 one, in 2018 two and in 2019 three joint publications with the hosts at NICT and Shizuoka University were published and the research results were presented at international conferences in Copenhagen (Denmark), Nagoya (Japan), Paris (France) and in 2020 in virtual format in Buffalo (USA). This includes the main annual international event for the global accelerator community and industry, the *International Particle Accelerator Conference*, and the *International Conference on IRMMW-THz*. The latter is the oldest and largest forum dedicated to ultrahigh frequency electronics and applications, and has been held annually since 1974.

The author participated in the IRMMW for the first time in 1989, where he met PhD students and professors from Japan. Besides these, the results were reported at the 4th *International Symposium on Biomedical Engineering* (ISBE 2019) in Hama-

matsu and at the 1st *French-German THz Conference 2019* in Kaiserslautern.



The author with members of the laboratory of Prof. Inokawa at Shizuoka University in November 2019 (PhD students Alka Singh in the first year (back) and Revathi Manivannan in the second year (middle) and Aamir Mamajiwal (front), Master student in the second year) (Photo: Aamir Mamajiwal)

The Follow-up Activities to Build Sustainable Networks

Short stays of a maximum of one week per year in Japan and Germany and virtual formats in 2020 were used to synchronize long-term and joint research activities as well as to organize the preparation of the extension of the MOU. In addition, satellite meetings took place alongside international conferences. Visits to Shizuoka University in Hamamatsu were further supported by Cooperative Research Projects with the *Research Center for Biomedical Engineering* of *Tokyo Medical and Dental University* at the *Research Institute of Electronics* in Hamamatsu. These activities were funded by the *Ministry of Education, Culture, Sports, Science and Technology* (MEXT).

At the 55th meeting of the German-Japanese Societies (Deutsch-Japanische Gesellschaften, DJG) in May 2019 in Bonn, the author, as part of the *German JSPS Alumni Association*, reported on the stay supported by the BRIDGE program. In December 2019, a NICT researcher was in Karlsruhe so that research equipment from Japan could be installed at KIT for one year and could be extended by a further year due to travel restrictions imposed by the SARS-COVID-19 pandemic. This would not have been possible without an MOU. In autumn 2020, the MOU between Shizuoka University and KIT was extended for another five years.



From left to right: Berthold Fritz and Teruko Matsushima-Fritz (Chairman of the Board and 2nd Chairperson of the Deutsch-Japanische Gesellschaft (*German-Japanese Society*) Karlsruhe) and E. Bründermann at the reception of the Japanese ambassador at the DJG Association Meeting in Bonn on May 31st, 2019 (Photo: Berthold Fritz)

The BRIDGE Program – A Success Story

The BRIDGE program has enabled the author to intensify and continue the cooperation and to take advantage of the opportunity to stay for a longer period than one week, to participate in other networks, to make a variety of contacts in several locations in Japan and to prepare framework agreements such as MOUs. Networks that are carried by individuals sometimes form spontaneously, but require constant care and the often-tireless efforts of individuals to be productive and sustainable. The BRIDGE program specifically promotes this necessary maintenance of networks.

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BRIDGE Program: Bridge Over Troubled Waters – Ein Bericht

von Clubmitglied Dr. oec Georg D. Blind, Universität St. Gallen und Universität Zürich, Schweiz

Nach einem ersten Forschungsaufenthalt im Rahmen eines „Post-doctoral Fellowship“ in den Jahren 2008 und 2009, konnte ich dank des Bridge-Fellowships zu Beginn des Jahres 2017 erneut für sechs Wochen nach Japan aufbrechen. Für den Aufenthalt war eigentlich vorgesehen, gemeinsam mit dem Betreuer Dr. Shibayama von der Universi-

tät Tokyo einen Projektantrag für ein bilaterales Forschungsprojekt auszuarbeiten. Dieses Vorhaben musste ich jedoch aufgeben, da Dr. Shibayama noch vor der geplanten Projekteingabe eine Stelle in Schweden angenommen hatte und so zum Eingabetermin nicht mehr antragsberechtigt gewesen wäre.

Mit Dr. Shibayama verständigte ich mich vor diesem Hintergrund darauf, die Zeit des Fellowships für die Suche nach einem neuen Antragspartner (s.u.) und für den Abschluss früherer Arbeiten einzusetzen. Seitens JSPS war man freundlicherweise bereit, die Widmung des Bridge Grants auf den zugegebenermaßen vagen Titel „Essays on the Japanese Economy: An international perspective“ zu ändern. Ich hatte also die Gelegenheit, mich in geeigneter Umgebung und mit einem freundlichen Partner ganz unterschiedlichen Arbeiten zu widmen, von denen mittlerweile alle in verschiedenen Zeitschriften erschienen sind:

1. *Japans Wachstum seit 1990 strukturell gleichauf mit Deutschland und den USA*

Darunter fällt ein Beitrag in der japanischen Ausgabe der Harvard Business Review aus dem Juni 2017 (<https://www.dhbr.net/articles/-/4886>), der im Kern belegt, dass sich die Differenz im Wirtschaftswachstum zwischen Japan, den USA und Deutschland von 1990 bis 2015 fast vollständig über eine unterschiedliche Entwicklung der Erwerbsbevölkerung erklären lässt und nicht – wie landläufig häufig angenommen wird – mit mangelndem Produktivitätswachstum. Es lässt sich vereinfacht gesagt also argumentieren, dass der Wert einer gearbeiteten Stunde in den drei Ländern nahezu identisch zugenommen hat, und sich das insbesondere gegenüber den USA verlangsamte gesamtwirtschaftliche Wachstum Japans fast vollständig aus dem demographischen Wandel und der fortgesetzt eher restriktiven Einwanderungspolitik erklären lässt.

2. *Irrational exuberance: Ausländische Investoren „japanischer“ als die japanische Konkurrenz?*

Im Weiteren ist im *Journal for Economic Interaction and Coordination* eine Arbeit veröffentlicht (<https://doi.org/10.1007/s11403-020-00307-0>), in der die theoretische Grundlage zur Anpassungs-