

§52. Organization of the All-Japan ST Research Group

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Based on the conclusions of the “Kyushu University Plasma Boundary Dynamics Experimental Device Review Committee”, a formal proposal was made to reorganize spherical tokamak (ST) research in Japan as the All-Japan ST Research Program, and to build a new ST device at Kyushu University to fulfill one of the missions of this program, steady state operation. This proposal was officially approved by the NIFS Collaboration Committee.

The All-Japan ST Research Program is organized under Bi-Directional Collaboration of NIFS, and promotes creative and innovative research at universities and other institutions. To maintain international competitiveness and to make significant contributions internationally, it is crucial to integrate all resources, including experimental research using existing devices in addition to the new ST, as well as theoretical and computational research. The purpose of this collaborative research is to organize the All-Japan ST Research Group to carry out this program, and to initiate its activity. It will also form the All-Japan ST Research Program Steering Committee to coordinate activities and to establish priorities within the All-Japan ST Research Program.

Three meetings were held, and the All-Japan ST Research Group and the All-Japan ST Research Program Steering were organized. The All-Japan ST Research Group consists of all researchers interested in ST research, and carries out research. The All-Japan ST Research Program Steering Committee consists of leaders of experimental and theory/simulation groups, with the members of the Kyushu University Plasma Boundary Dynamics Experimental Device Review Committee as core members, and this group coordinates the All-Japan ST Research Program.

The first of the three meetings (April 21 at Kyoto University, attended by 16 researchers) was a joint meeting of the All-Japan ST Research Group and the fifth meeting of the Kyushu University Plasma Boundary Dynamics Experimental Device Review Committee. At this meeting a resolution was made to form the All-Japan ST Research Program Steering Committee. The second meeting (Aug. 5 at the University of Tokyo, attended by 11 researchers) and the third meeting (Dec. 7 at NIFS, attended by 12 researchers) were meetings of the All-Japan ST Research Program Steering Committee. Through these meetings, a common understanding of the objectives, mission, and

basic strategy of the All-Japan ST Research Program was developed.

In particular, the All-Japan ST Research Program aims at establishing the scientific basis and contributing to broadening the options for fusion power plants. These are accomplished by creative and innovative research, focused in the two major research elements of “ultra-high beta” and “ultra-long pulse.” Plasma start-up, current drive, heat and particle control, and plasma-wall interaction are important enabling research elements necessary to support the main objectives of the program. High quality research on these elements will be realized by collaboration on the all-Japan scale. Research which cannot be pursued on ST devices in Japan, such as the sustainment of very high beta plasmas, will be performed utilizing international collaborations.

The All-Japan ST Research Group was established as a result of this activity. Prof. Takase of the University of Tokyo has been selected as the coordinator of the program. In addition, the All-Japan ST Research Program Steering Committee was established provisionally, and has started its activity. Preparations are in progress to establish new rules that would make the All-Japan ST Research Program Steering Committee an officially authorized committee under the NIFS Bi-Directional Collaboration Committee. The All-Japan ST Research Program Steering Committee is expected to replace the functions of the Kyushu University Plasma Boundary Dynamics Experimental Device Review Committee.

ST research in Japan, including the activities of the All-Japan ST Research Program Steering Committee, will continue to be supported by Bi-Directional Collaboration of NIFS. The Steering Committee will lay down the research plan for the All-Japan ST Research Program, including formation of research strategy, establishment of priorities of research elements, coordination of roles of different groups, utilization of experimental devices, and enhancement of collaborations. In addition, a plan is being developed to make the All-Japan ST Research Program function as a virtual research center, making full use of remote conferences and remote experimental participation via the Super SINET.

This collaboration has also contributed greatly to the improvement of the QUEST device design.

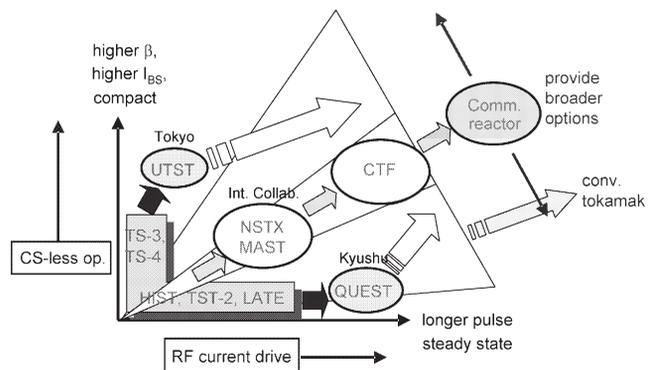


Fig. 1. Strategy of the All-Japan ST Research Program.