

## §2. The Role of Inter-Univ. Institute for Nuclear Fusion Research in Early Period

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### *Inter-university collaborative institute*

When the 1<sup>st</sup> UN International Conference on Peaceful Uses of Atomic Energy (Geneva, 1955) brought a strong impact toward nuclear fusion studies in Japan, the general circumstances for the scientific development were in quite a hard time. Official policy-making discussions were made at Japan Atomic Energy Commission (JAEC) and the Science Council of Japan (SCJ), on the basis of the unofficial forum of fusion researchers' community, Kakuyugo-Kondankai (K-K, organized in 1958).

After intensive discussions on starting procedure of A-plan (fundamental and systematic studies of plasma physics) *versus* B-plan (construction and operation of sizable machine), it was decided to begin with A-plan. This resulted in the establishment of the Institute of Plasma Physics, Nagoya University (IPP, 1961~89), as a "university-attached institute with inter-university nature," and to be devoted to promote fundamental plasma physics through the nation-wide collaboration works funded by Monbusho.

### *Some characteristics of IPP*

- (1) Belonging to Nagoya University, IPP was practically free in its operations from the University, and vice versa. "Mutual respect and mutual independence"
- (2) The management of IPP was controlled by its own Steering Committee, no less than half members of which was elected from K-K, and the rest from the IPP staff. The Steering Committee played as the Faculty Meeting.
- (3) Research program plans of IPP were openly proposed and discussed by the Scientific Committee, whose members were also based on K-K.
- (4) The IPP budget, funded by Monbusho, was treated separately from the University, to avoid conflict.
- (5) The IPP staff and facilities contributed to the education of graduate school course of the University.
- (6) Various supporting systems had been introduced to realize better conditions of research collaboration and information exchange useful to the fusion community: Guest Professorship, Technology Division, Computer

Center, Research Information Center, etc.

(7) Every post for research job at IPP was open to the community, and discussed by the Steering Committee. The term-of-job system was usually not applied.

### *Dual lines of budget flow (Fig. 1)*

According with the Atomic Energy Laws, effective since 1955, JAEC had been in charge of atomic energy researches, with budget funded through the Science and Technology Agency (STA), while SCJ could recommend to Monbusho the policy of funding the university-based researches. Comprehensive approaches along B-plan (funded by STA) had been carried on by Japan Atomic Energy Research Institute (JAERI), etc. Since universities were not allowed to use the Atomic Energy Fund directly, two different funding lines for fusion research promotion were coexisting in Japan.

### *Historical periods for IPP*

- Period O* (1958~1960) [Before IPP establishment]  
\* Checking possible characteristics of key institutions.
- Period I* (1961~1973) [1<sup>st</sup> Program Plan and others]  
\* Rise in IPP collaborative activities especially on the basic plasma physics shows strong supports by the K-K.  
\* Revision of institutional system and trials for plasma confinement (~1969). < cf. Report by Matsuoka et al. >
- Period II* (1974~1980) [2<sup>nd</sup> Program Plan]  
\* Programs at individual universities were promoted, resulting in plural centers of fusion researches.  
\* IPP aimed at: keV-plasma confinement, relativistic plasmas, multi-path approach to fusion. Basic physics studies with objective target of fusion research.
- Period III* (1980~1989) [3<sup>rd</sup> Program Plan]  
\* Indispensable expansion to reactor technology.  
\* Importance of international collaboration efforts.  
\* Necessity of an inter-university institute not belonging to a particular university.

<NIFS Collaborative Research Program (NIFS05KVXJ006)>

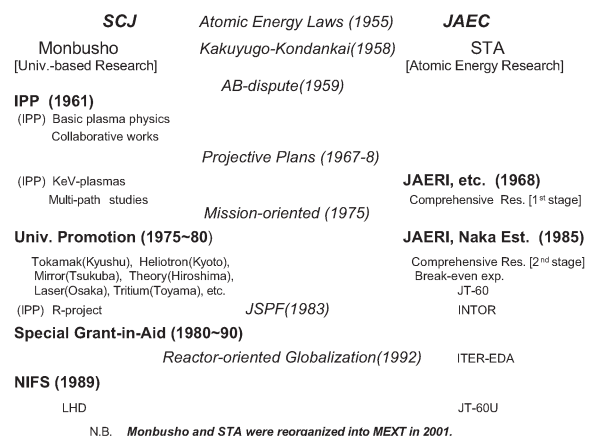


Fig. 1 Fusion research promotion scheme in Japan