

2009 KNS-AESJ Joint Session of Reactor Physics and Nuclear Data

The reactor physics and the nuclear data
technical divisions of AESJ

“2009 KNS-AESJ Joint session of Reactor Physics and Nuclear Data” was executed jointly with the reactor physics and the nuclear data technical divisions of Korea and Japan on Wednesday, March 25, 2009 in the 2009 annual meeting (Tokyo Institute of Technology) of the Atomic Energy Society of Japan.

Program:

12 : 30~14 : 30 at K hall

Reactor Physics Chairperson: Tetsuo MATSUMURA (CRIEPI)

- Current status of Accelerator-Driven System (ADS) in Kyoto University Critical Assembly (KUCA) (KURRI) Cheolho Pyeon
- Status of Direct Whole Core Transport Calculation by DeCART (SNU) Han Gyu JOO
- Lumped CMR Scheme for VHTR Core Calculations (KAERI) Jin Young CHO

Nuclear Data Chairperson: Masayuki IGASHIRA (Tokyo Institute of Technology)

- Present Status of JENDL-4 (JAEA) Keichi SHIBATA
- Nuclear Data Evaluation for the Next Generation Nuclear Systems (KAERI) Young Ouk LEE

Discussion about cooperation of Korea-Japan

Chairperson: Tetsuo MATSUMURA (CRIEPI) and
Masayuki IGASHIRA (Tokyo Institute of Technology)

Contents:

1. Reactor physics

Dr. C. Pyeon (KURRI) reported that the commission of ADS was achieved for the first time in KURRI (Kyoto University Research Reactor Institute) on March 4, 2009. Protons of 100MeV accelerated by



the FFAG(Fixed Field Alternating Gradient) were transported and injected into the tungsten target equipped in A-assembly of KUCA, and spallation reactions were induced, then ADS system were initiated by the spallation neutrons. He introduced that KURRI will continue the adjustment of the proton accelerator, and accumulate the testing data of the ADS system.

Professor Dr. Han Gyu JOO (Seoul National Universities) introduced the



DeCART code that enables to analyze three dimensional whole core with transport calculation. The DeCART code is characterized with nodal SP3 axial solver and double heterogeneity handling capability of the high-temperature gas reactor. The procedures for the VHTR reactor core calculation were introduced.

Dr. J Y CHO (KAERI) presented the analytical result of the VHTR reactor core with the DeCART code. Due to large He gas hall of the VHTR reactor core for the control rod insertion, the new scheme (LCMR) was introduced to calculation convergence. Three kinds of benchmark problems were analyzed, and an excellent analytical performance was shown.



2. Nuclear Data



Dr. K. Shibata (JAEA) presented the development status of JENDL-4. In JENDL-4, improvements are especially performed on the nuclear data of FP and MA nuclides and will be released by the end of Japanese

fiscal year 2009. For the actinide nuclides, the special file (JENDL/AC-2008) including 79 nuclides has already been released, and excellent results were obtained with the benchmark analyses of the fast reactor. It was reported that the resolved resonance parameters of 122 FP nuclides were reviewed and had been evaluated.

Dr. Y O LEE (KAERI) presented the outline of the nuclear data evaluation research in South Korea. Developments of the nuclear data evaluation tool and evaluation study were advanced to contribute to nuclear data file such as ENDF/B-VII internationally.



3. Discussion about cooperation of Korea-Japan

Finally, the chairpersons instituted the subjects about the action policy and development strategy on relation of Korea-Japan in the future, based on details of current Korea-Japan relation on the reactor physics and the nuclear data research. It was confirmed that discussing should be continued in the future.

In the frame of the session of AESJ annual meeting program in two hours, five technical presentations of Korea and Japan were carried out. However, the time for the discussion was not enough. It is concluded that the role of the beginning of the cooperation between Korea-Japan on the reactor physics and the nuclear data research was achieved in this joint session.

