

Coherent science III

January 31, 2000, Wako, Japan

Organized by the Coherent Science Research Group

Recently, various phenomena have been categorized into one field, sharing the keyword "Coherence", which was originally used in laser science. This indicates the possibility of macroscopic manipulation of microscopic phenomena that will enable new scientific and technological achievements. This symposium was held to discuss subjects common among coherence-related phenomena such as the generation of coherent light, fabrication of coherent structures, control of coherent reaction, and coherent characteristics in materials.

The theme of this symposium was "From light to condensed matter" and we had 9 oral presentations and 34 poster presentations. More than 130 scientists and students attended the symposium, and intense and fruitful discussions took place.

The symposium proceedings (in Japanese) is now available.*

Shell model 2000

March 5–8, 2000, Wako, Japan

Organized by the Cyclotron Center

The nuclear shell model has been advanced in recent years, with new aspects. In this RIKEN symposium, Shell Model 2000, the nuclear shell model and related experiments have been discussed extensively by many of the most active researchers from around the world. Various subjects on nuclear structure were covered, in particular from the viewpoint of the shell model, such as (1) the structure of unstable nuclei, (2) proton-neutron correlations, (3) astrophysical implications, (4) the advancement of shell-model calculation, and (5) other related topics, including nuclear collective motion and statistical features. The Monte Carlo Shell Model, which has been developed in RIKEN as one of its major research initiatives, is closely connected to all these subjects and has played a key role in the symposium, by showing impressive results produced by the Massive Parallel Computer, ALPHLEET, at RIKEN. The symposium had close links to the physics of the RIKEN RI Beam Factory project and should contribute to its further developments and success.

There were 45 presentations including 30 invited speakers. About 83 participants attended the symposium, and lively and valuable discussions took place throughout the symposium. The proceedings of the symposium will be published as a special volume of the widely distributed international journal *Nuclear Physics A* by Elsevier.

Studies on condensed matter physics, atomic physics, hyperfine interactions and biomedical sciences using RIKEN accelerators

January 31, 2000, Wako, Japan

Organized by the Muon Science Laboratory, the Applied Nuclear Physics Laboratory, the Cellular Physiology Laboratory, the Atomic Physics Laboratory, and the Cyclotron Center

Experimental studies using the RIKEN Ring Cyclotron, LINAC, RIKEN-RAL Muon Facility are being carried out extensively to cover a wide range of scientific fields other than nuclear physics. In this symposium, recent topics in condensed matter physics, atomic physics, hyperfine interactions and biomedical science were reported from each scientific field. In addition, the latest design for the RIKEN RI Beam Factory was presented. In total, 9 talks were presented and 36 scientists attended including 7 from outside RIKEN.

Computer science with supercomputers and special-purpose computers

March 22 and 23, 2000, Wako, Japan

Organized by the Computer and Information Division

Rapid increases in the computational resources of supercomputers and special-purpose computers will open new frontiers in many fields of science and technology. The purpose of this symposium was to review the results of large-scale simulations and to provide a forum for the discussion of future prospects of the computational sciences in computer systems with peak speeds higher than 1 Tflops. The focus was on the large-scale simulations performed using the Fujitsu VPP700E/160 supercomputer housed at RIKEN (16 presentations and 96 participants).

The symposium proceedings (in Japanese) is available.*

* Contact: Publishing Section of the Institute