A-12～A-15

Algorithm Theory

Basic Study of Algorithms

Graph Algorithms

Computational Geometry

Approximation Algorithms

Studies on algorithms were actively carried out in Japan as well and many world-class findings were published. N. Tokura focused attention on the study of VLSI algorithms from early on. He carried out basic studies about the dispersion algorithm and the parallel algorithm and also visualized various algorithms.

Meanwhile, for the graph algorithm, in the 1980s, T. Nishizeki and G. Shyu developed the theory about plane graphs, thereby making algorithms more efficient as well as pioneering the algorithm study on graph drawing in the world. In addition, in the 1990s, T. Ibaraki and H. Nagomochi discovered graph forest decomposition and based on this discovery they constructed an algorithm to compute the minimum cut without going through the maximum flow, thereby achieving a theoretical breakthrough.

In Japan, around 1980, M. Iri, et al., advanced study in the field of computational geometry working on an algorithm which was able to effectively process a diagram on the Euclidean plane with a computer, and they established the standard methodology for effectively processing geographical information.

Recently, with respect to stable marriage known as the NP challenge issue, K. Iwama, et al., proposed a breakthrough approximation algorithm where the ratio of approximate solutions to optimal solutions is less than two.

NP: Non-deterministic Polynomial time