RESEARCH REPORT

● Research Title	A posteriori error estimation and its application to adaptive mesh refinement using transition element
● Research Field	Finite Element Method (Ref. no: FE-01)
● Research Period	March 1995 ~ Feb. 1996
● Related Publications	K. Park and D. Y. Yang, "A posteriori error estimation and its application to adaptive mesh refinement in the rigid-plastic finite element method", *J. of Kor. Soc. Mech. Engng. (A),* Vol. 22, No. 7, pp. 1278 ~ 1286 (1998).
● Summary	▪ Posteriori error estimation for rigid-plastic finite element formulation ▪ Adaptive mesh refinement scheme using transition element
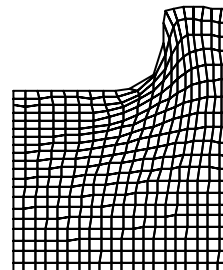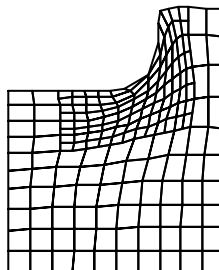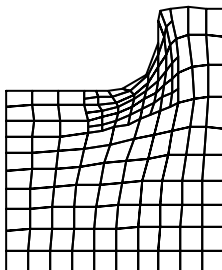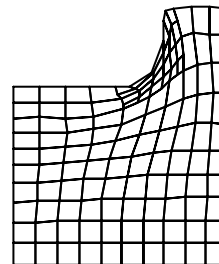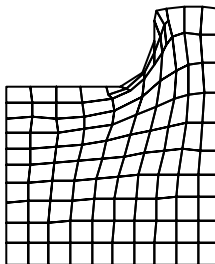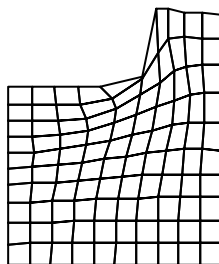
RESEARCH REPORT

● Research Title	Domain decomposition using substructuring method and its application to parallel computation
● Research Field	Finite Element Method (Ref. no: FE-02)
● Research Period	March 1996 ~ Feb. 1997
● Related Publications	K. Park and D. Y. Yang, "Domain decomposition using substructuring method and parallel computation of the rigid-plastic finite element analysis", *J. of Kor. Soc. Tech. Plasticity,* Vol. 7, No. 5, pp. 474 ~ 480 (1998).
● Summary	- Domain decomposition (substructuring method) - Parallel computation using Parallel Virtual Machine (PVM) library - Application to rigid-plastic FE analysis
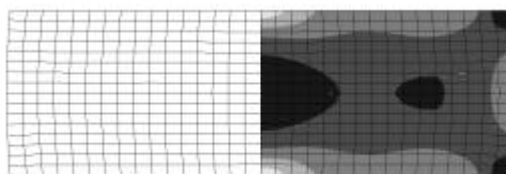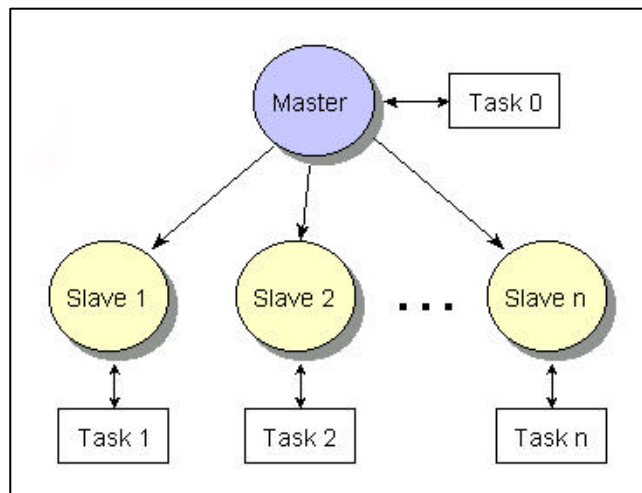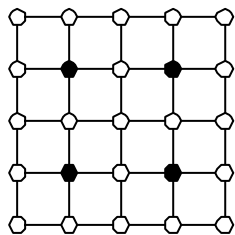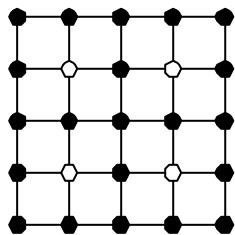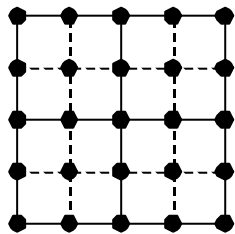
RESEARCH REPORT

● Research Title	Mismatching refinement with domain decomposition and iterative calculation
● Research Field	Finite Element Method (Ref. no: FE-03)
● Research Period	March 1997 ~ Feb. 1998
● Related Publications	K. Park and D. Y. Yang, "Mismatching refinement with domain decomposition for the analysis of steady-state metal forming processes", *Int. J. Numer. Meth. Engng.* Vol. 48, No. 7, pp. 1089 ~ 1106 (2000).
● Summary	▪ Domain decomposition with iterative calculation between adjacent subdomains ▪ Mismatching refinement with overlapped region ▪ Convergence analysis through several numerical examples of metal forming problems
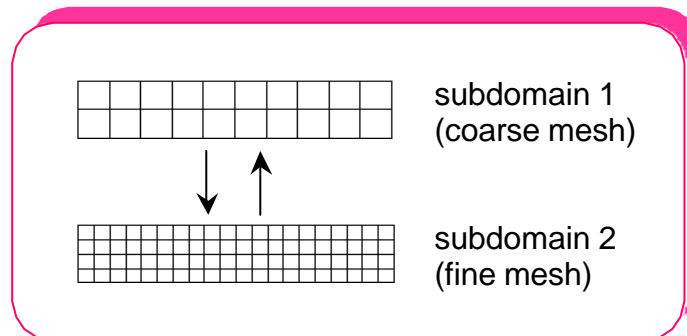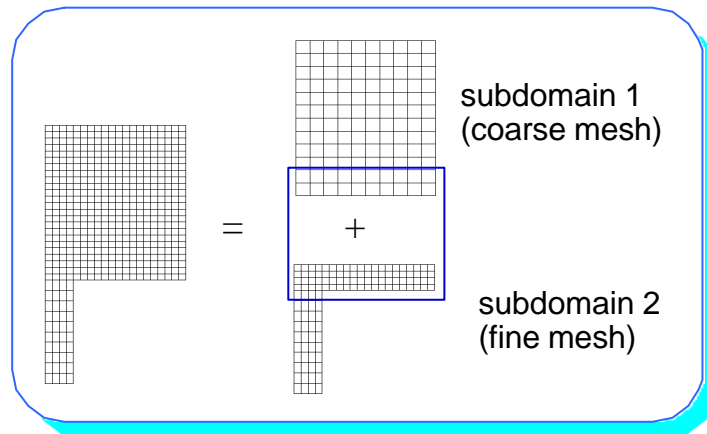
RESEARCH REPORT

● Research Title	Development of finite element analysis system with automatic remeshing and adaptive refinement
● Research Field	Finite Element Method (Ref. no: FE-04)
● Research Period	Dec. 1995 ~ Oct. 1998
● Related Publications	D. Y. Yang et al, "Development of automatic design and analysis system for forging die", *Annual report to The Ministry of Commerce, Industry, and Energy, Korean Government* (1998)
● Summary	▪ Development of finite element analysis system based on MS-Windows platforms ▪ Automatic remeshing with adaptive refinement ▪ Integration of the FE simulation module with automatic die design & process design module

Ref. no: FE-04