Preface

This issue contains carefully refereed and selected papers presented at the second workshop on global optimization of the International Institute for Applied Systems Analysis (IIASA), Laxenburg (Austria) which was held in Sopron (Hungary), December 9–14, 1990. T. Csendes, R. Horst, A. B. Kurzhanski and A. H. G. Rinnooy Kan contributed to the organization of the meeting. P. Hansen and R. Horst acted as final programme committee, and secretarial assistance and local organizational help was provided by Erica Mayhew and Zsófia Zámori.

All the participants were invited by IIASA, and the workshop showed the enormous progress and the diversity of approaches that we have seen recently in theory, algorithms and applications of global optimization.

The articles of this issue reflect this situation. The article of G. M. Guisewite and P. M. Pardalos discusses and compares numerically algorithms for the single-source uncapacitated minimum concave-cost network flow problem. A global search heuristic based on random extreme feasible initial solutions and local search is developed and interesting complexity results are derived. The contribution of C. G. E. Boender and A. H. G. Rinnooy Kan approaches from a Bayesian perspective the crucial question of when to stop sampling for the maximum from an unknown discrete probability of an unknown range of integers. It is shown that the resulting rules offer an extremely simple approximate solution to the problem of terminating the well-known multistart method for continous global optimization. The article of N. V. Thoai presents an outer approximation-decomposition method to find the global minimum of the product of two convex functions over a convex set which transforms the problem into one of two additional variables whose special structure allows one to reduce the multiextremal aspect of two dimensions. E. Hansen discusses an interval analytical approach to parametric global optimization which guarantees bounds on the solution sets when the parameters vary over given intervals. The article of E. G. Sturua and S. K. Zavriev presents trajectory algorithms based on a projected subgradient method which finds in a finite number of steps an ε-optimal solution for certain global minimization problems where the objective function is convex in some variables. E. M. T. Hendrix and J. Pintér present an application of Lipschitzian global optimization to product design with interesting implementational devices.

Additional selected articles presented at the meeting will appear in later issues of the *Journal of Global Optimization*.

Finally, I take the opportunity to express my sincere appreciation to the anonymous referees, to IIASA for support and hospitality, and to all people inside and outside IIASA who contributed to successful meeting.

Trier, September 1991.   R. HORST