Math. Struct. in Comp. Science (2004), *vol.* 14, *p.* 769. © 2004 Cambridge University Press
DOI: 10.1017/S0960129504004347 Printed in the United Kingdom

Introduction to special issue on domain theory

Domain theory, which was introduced by Dana Scott in the early 1970s, works on the principle of incorporating partial elements into denotational domains. The resulting structures are ordered by a natural notion of refinement or approximation, and they carry a topology that expresses the process of passing to a limit.

Scott's approach was inspired by work in recursion theory, where it had long been recognised that the set of partial recursive functions enjoys better structural properties than the set of total ones. Consequently, research in this field was initially dominated by the application of domain theory to questions in the semantics of programming languages. However, the idea of making partial elements explicit is a much more fundamental one, and can also be employed to good effect in other areas of mathematics and computer science. This special issue tries to illustrate this.

The editors wish to thank the authors and referees of the papers presented here. Our thanks also include Giuseppe Longo for suggesting the topic of this special issue and for his encouragement and advice throughout.

Abbas Edalat and Achim Jung
Guest Editors
March 2004

https://doi.org/10.1017/S0960129504004347 Published online by Cambridge University Press