
In the design and verification of concurrent or parallel systems the semantics of the system description language plays a crucial role. The meaning of such a language is given by an equivalence class of systems which are to be considered to be equivalent on a certain level of abstraction. Action refinement consists of replacing the atomic building blocks in the language by separate subsystems, lowering the level of abstraction, and allowing design steps in which actions are replaced by more complex system descriptions. Comparative concurrency semantics studies and classifies the many semantics that have been proposed in this field.

This CWI Tract is a slightly revised version of the author’s doctoral dissertation; it consists of seven papers, of which five have been written together with a co-author: F. Vaandrager (Ch. 2), P. Weijland (Ch. 3), and U. Goltz (Ch. 4, 5, 6). These papers are preceded by a short introduction (pp. 5–15) of which the second half is a list of 60 results claimed to be novel. The (revised) papers or chapters are:


Since this CWI Tract is anything but a monograph (viz. 7 papers with a too concise introduction), the question arises “What is the use of this issue?”. Researchers in this field have probably studied the original publications, and other people will prefer a more introductory text.

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