Higher-Order Processes and Their Models

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A higher-order process algebra in which processes can be sent and received as data along channels is investigated. Using a simple operational semantics two behavioural preorders are defined. The first, based on may testing, is in terms of the ability of processes to offer communications on channels while the second, based on must testing, depends on the communications which processes can guarantee.

The first behavioural preorder can be modelled by a denotational semantics which uses a notion of higher-order traces while for the second we develop a denotational model using higher-order Acceptance Trees.