Sequential Functions on Indexed Domains
and Full Abstraction for a Sub-language of PCF

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Abstract

We present a general semantic framework of sequential functions on domains equipped with a
parameterized notion of incremental sequential computation. Under the simplifying assumption
that computation over function spaces proceeds by successive application to constants, we construct
a sequential semantic model for a non-trivial sub-language of PCF with a corresponding syntactic
restriction — that variables of function type may only be applied to closed terms. We show that the
model is fully abstract for the sub-language, with respect to the usual notion of program behavior.

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