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Heap-abstraction for an object-oriented calculus with thread classes. (English)

[Zbl 1145.68380](#)

Beckmann, Arnold (ed.) et al., Logical approaches to computational barriers. Second conference on computability in Europe, CiE 2006, Swansea, UK, June 30–July 5, 2006. Proceedings. Berlin: Springer (ISBN 3-540-35466-2/pbk). Lecture Notes in Computer Science 3988, 1-10 (2006).

Summary: This paper formalizes an open semantics for a calculus featuring thread classes, where the environment, consisting in particular of an overapproximation of the heap topology, is abstractly represented.

We extend our prior work not only by adding thread classes, but also in that thread names may be communicated, which means that the semantics needs to account explicitly for the possible acquaintance of objects with threads. We show soundness of the abstraction.

For the entire collection see [[Zbl 1102.68002](#)].

MSC:

[68N30](#) Mathematical aspects of software engineering (specification, verification, metrics, requirements, etc.)

[68Q55](#) Semantics in the theory of computing

Keywords:

[class-based oo languages](#); [thread-based concurrency](#); [open systems](#); [formal semantics](#); [heap abstraction](#); [observable behavior](#)

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