Franco, Juliana; Clebsch, Sylvan; Drossopoulou, Sophia; Vitek, Jan; Wrigstad, Tobias
Correctness of a concurrent object collector for actor languages. (English) [Zbl 1418.68040]

Summary: ORCA is a garbage collection protocol for actor-based programs. Multiple actors may mutate the heap while the collector is running without any dedicated synchronisation. ORCA is applicable to any actor language whose type system prevents data races and which supports causal message delivery. We present a model of ORCA which is parametric to the host language and its type system. We describe the interplay between the host language and the collector. We give invariants preserved by ORCA, and prove its soundness and completeness.

For the entire collection see [Zbl 1408.68004].

MSC:

68N19 Other programming paradigms (object-oriented, sequential, concurrent, automatic, etc.)

Full Text: DOI