

Montenegro, Manuel; Shkaravska, Olha; van Eekelen, Marko; Peña, Ricardo
Interpolation-based height analysis for improving a recurrence solver. (English)

[Zbl 1367.68071](#)

Peña, Ricardo (ed.) et al., Foundational and practical aspects of resource analysis. Second international workshop, FOPARA 2011, Madrid, Spain, May 19, 2011. Revised selected papers. Berlin: Springer (ISBN 978-3-642-32494-9/pbk). Lecture Notes in Computer Science 7177, 36-53 (2012).

Summary: The COSTA system infers resource consumption bounds from Java bytecode using an internal recurrence solver PUBS. This paper suggests an improvement of the COSTA system, such that it can solve a larger number of recurrences. The idea is to replace one of its static analyses, the ranking function analysis, by another kind of analysis, height analysis, in such a way that polynomial bounds of any degree may be inferred instead of just linear expressions. The work can be seen as an application of some polynomial interpolation techniques used by some of the authors in prior analyses. Finding a way to choose proper test nodes is the key to the solution presented in this paper.

For the entire collection see [[Zbl 1250.68046](#)].

MSC:

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

Software:

[PPL](#); [QEPCAD](#); [REDLOG](#)

Full Text: [DOI](#)