Coarse-grain Optimization and Code Generation for Embedded Multicore Systems

(Invited Paper)

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Abstract—As processors and systems-on-chip increasingly become multicore, parallel programming remains a difficult, time-consuming and complicated task. End users who are not parallel programming experts have a need to exploit such processors and architectures, using state of the art fourth generation of high programming languages, like Scilab or MATLAB. The ALMA toolset addresses this problem by receiving Scilab code as input and produces parallel code for embedded multiprocessor systems on chip, using platform quasi-agnostic optimisations. In this paper, coarse grain parallelism extraction and optimization issues as well as parallel code generation for the ALMA toolset are discussed.