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Algorithms for Structured Linear Systems Solving and their Implementation

mardi 15 mai 2018 15:00 (45 minutes)

There exists a vast literature dedicated to algorithms for structured matrices, but relatively few descriptions of actual implementations and their practical performance in symbolic computation. In this talk, we consider the problem of solving Cauchy-like systems, and its application to mosaic Toeplitz systems, in two contexts: first over finite fields where basic operations have unit cost, then over Q. We introduce new variants of previous algorithms and describe an implementation of these techniques and its practical behavior. We pay a special attention to particular cases such as the computation of algebraic approximants.

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