

MPCR: An Efficient and Flexible Chains of Recurrences Server

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Abstract

MPCR is a stand-alone, flexible, and efficient implementation of the Chains of Recurrences (CR) method. It can be used interactively, as a network-based server, or as a library. Using the CR method, MPCR evaluates closed-form expressions over regular grids with great efficiency – often hundreds of times faster than comparable programs. MPCR also features an MP (Multi Protocol) interface for data exchange, conditional CR simplification, use of intermediate evaluation arrays and generation of C source code. Evaluation timings are given and compared with other programs, and the algorithms which result in the high efficiency of MPCR are discussed.

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