

## Parallel Multisplitting Methods for DAE's

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**Abstract :** We consider iterative parallel multi-splitting method for differential algebraic equations. The main feature of the proposed idea is to use the asynchronous form. We prove that the multi-splitting technique can effectively accelerate the convergent performance of the iterative process. The main characteristic of an asynchronous mode is that the local algorithm not have to wait at predetermined messages to become available. We allow some processors to communicate more frequently than others, and we allow the communication delays to be substantial and unpredictable. Note that synchronous algorithms in the computer science sense are particular cases of our formulation of asynchronous one.

**Keywords :** computer, multi-splitting methods, asynchronous mode, differential algebraic systems

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