Error estimation approach for controlling the comunication step size for semi-implicit co-simulation methods

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This contribution presents an approach for controlling the macro-step size in connection with co-simulation methods [1, 3]. The investigated step-size controller is tailored for semi-implicit co-simulation techniques. Concretely, we consider predictor/corrector co-simulation approaches [2]. By comparing variables from the predictor and the corrector step, an error estimator for the local error can be constructed. Making use of the estimated local error, a step-size controller for the macro-step size can be implemented. Different numerical examples are presented, which show on the one hand the applicability of the method and on the other hand the benefit of a variable macro-grid with respect to simulation time.

References

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