

Experiences in Refactoring Software Code for the Solution of the Wave Equation based on a Very Weak Space-Time Variational Formulation

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Recently a mathematical approach for the efficient numerical solution of the Wave Equation based on a very weak space-time variational formulation has been proposed by J. Henning, D. Palitta, V. Simoncini and K. Urban. Beside mathematical analysis the authors developed software code generating numerical results. This software code is actually in progress of refactoring to facilitate further developments with respect to mathematical methodologies and usage in combination with different software packages. Special care needs the design and implementation of efficient preconditioning strategies for the algebraic linear equations. The solution of (generalized) Sylvester Equations plays an important role in this context.

In this talk we address experiences in refactoring software code including mathematical challenges, software design and reproduction of numerical results.

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Sitzung Einordnung: Contributed Talks