

## Space-time Localized RBF Collocation Methods for PDEs

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We are experimenting with space-time localized radial basis function methods for the numerical solutions of time-dependent PDEs. Unlike common numerical schemes where space and time are treated independently (known as the method of lines), the time variable in space-time formulation is treated as another space variable. The discretized version of PDEs are then solved as boundary value problems in space-time domain. Challenges in implementing the methods such as imposing boundary conditions and minimalizing degrees of freedom through adaptivity will be discussed. Several numerical examples will also be presented.