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Todd Romutis* (toddr@bgsu.edu) and **Tong Sun** (tsun@bgsu.edu). *Numerical smoothness and error analysis for parabolic equations.*

Numerical smoothness is an innovative approach to error analysis for numerical solutions of time-dependent partial differential equations. This talk will focus on the concept of numerical smoothness, its relationship to numerical stability, and the general framework with which the method can be applied to time-dependent PDEs. Past research results and current projects will be presented. (Received September 26, 2017)