5007-65-152 **Victoria Vampa*** (victoriavampa@gmail.com), Facultad de Ciencias Exactas, Calle 115 y 47, 1900 La Plata, Bs. As., Argentina, and **María Teresa Martín**. *An Adaptive Wavelet-Galerkin method for parabolic partial differential equations.*

In this work an adaptive method to solve partial differential equations of the form $u_t = \mathcal{L}u + \mathcal{N}f(u)$, where $\mathcal{L}$ is a linear differential operator and $\mathcal{N}f(u)$ is a nonlinear function, is presented. Once a time difference scheme is applied, an effective technique upon cubic spline multiresolution analysis on the interval is developed: the Modified Galerkin method [AMC] is used to obtain the approximation at an initial coarse-scale in terms of scaling functions and then wavelets are designed to increase the scale efficiently [IJWMIP]. The use of an error estimate in each time step allows to determine the scale j necessary to achieve the required precision. This Adaptive Wavelet-Galerkin method is based on a refinement process using wavelets developed by Vampa et al. for boundary value problems and is computationally attractive.

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