



Publicaciones: Análisis Numérico y Cómputo Científico.

- High-order entropy stable schemes based on a local adaptive WENO viscosity for degenerate convection-diffusion equations C Acosta, S Jerez Applied Numerical Mathematics 197, 322-343, 2024.
- Convergence of entropy stable schemes for degenerate parabolic equations with a discontinuous convection term C Acosta, S Jerez ESAIM: M2AN 57 (3), 1445-1472, 2023.
- Fast and Optimal WENO Schemes for Degenerate Parabolic Conservation Laws R Diaz-Adame, S Jerez, H Carrillo Journal of Scientific Computing 90 (1), 1-28, 2022.
- Convergence of time-splitting approximations for degenerate convection-diffusion equations with a random source R Díaz-Adame, S Jerez Journal of Numerical Mathematics 29 (1), 23-38, 2021
- Triangular finite differences using bivariate Lagrange polynomials with applications to elliptic equations RI Balam, MU Zapata, U Iturrarán-Viveros Mathematics and Computers in Simulation 227, 121-148, 2025
- Global second-order immersed interface Poisson solver using zero-order local truncation errors R Itzá Balam, M Uh Zapata, J Montalvo-Urquizo Boletín de la Sociedad Matemática Mexicana 30 (3), 1-35, 2024
- Numerical investigation of the scour around a diamond-and square-shaped pile in a narrow channel M Hurtado-Herrera, MU Zapata, A Hammouti, DP Van Bang, W Zhang, Ocean Engineering 309, 118374, 2024
- Hexagonal finite differences for the two-dimensional variable coefficient Poisson equation RI Balam, MU Zapata, U Iturrarán-Viveros Examples and Counterexamples 5, 100144, 2024
- Flow around a pile under highly non-linear waves using an unstructured finite-volume technique W Zhang, M Uh Zapata, Z Huang, KD Nguyen, D Pham Van Bang International Journal of Computational Fluid Dynamics 37 (8), 693-710, 2024
- A compact sixth-order implicit immersed interface method to solve 2D Poisson equations with discontinuities MU Zapata, RI Balam, J Montalvo-Urquizo Mathematics and Computers in Simulation 210, 384-407, 2023
- A parallel unstructured multi-color SOR solver for 3D Navier-Stokes equations on graphics processing units MU Zapata, FJ Hernandez-Lopez, RI Balam Computers Fluids 260, 105909, 2023





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- A new sixth-order immersed interface method for solving Poisson equations with straight interfaces RI Balam, MU Zapata, JM Urquizo Métodos numéricos para cálculo y diseño en ingeniería: Revista internacional, 2023.



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