

# Space-Time Simulation Models for Social Systems

**Juan Carlos Mico Ruiz**

Department de Matematica Aplicada  
Universitat Politecnica de Valencia  
Camino de Vera, 14  
46071, Valencia Spain  
E-mail: [jmico@mat.upv.es](mailto:jmico@mat.upv.es)

**Antonio Caselles Mancho**

Department de Matematica Aplicada  
Universitat de Valencia  
c/Doctor Moliner, 50  
46100 Burjassot Valencia Spain  
E-mail: [antonio.caselles@uv.es](mailto:antonio.caselles@uv.es)

## Abstract

A new kind of equation valid to simulate a social system with space-time variation is suggested. These equations are a generalization of partial differential equations or their approaches in finite-difference form, or too, a particular case derived from cellular automata models, in order to simulate satisfactorily all present processes in social systems. This model has been used to simulate a middle-sized city of Spain, creating hypotheses about functions of population diffusion inside the city and getting conclusions about the model's utility.

Back to [main](#) page.