

Invited paper

REPRESENTATION AND COMPUTATION OF GEOGRAPHIC DYNAMICS

Michael F. Goodchild
University of California, Santa Barbara, USA

Abstract

If the geographic domain is defined as the surface and near-surface of the Earth, then geographic dynamics describes all time-dependent aspects of that domain, including the results of processes that transform and modify it. This is a vast field, encompassing both social and physical phenomena. GIScience traditionally focuses on the scientific issues that lie behind GIS. In the context of geographic dynamics, it seems appropriate that GIScience focus similarly on the generic: the tools, data models, software, and other resources that facilitate analysis and modeling of dynamic phenomena. Fields and objects provide a useful framework for further discussion, since processes can be identified as field-based, object-based, or based on both conceptualizations. I review the current state of the art, and identify some significant gaps as the basis for a research agenda.