Jul 12th, 4:50 PM - 5:10 PM

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International Environmental Modelling and Software Society (iEMSs)
8th International Congress on Environmental Modelling and Software
Toulouse, France, Sabine Sauvage, José-Miguel Sánchez-Pérez, Andrea Rizzoli (Eds.)
http://www.iemss.org/society/index.php/iemss-2016-proceedings

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Abstract: Land use evolution study has become a major stake in urban planning. One of the main challenge is to understand processes behind. Various studies highlight the usefulness of simulation tools in research focusing on land use change. Among simulation tools, Cellular Automata (CA) are well adapted with their geometric properties and potential to identify emerging spatial structures and processes. The transition rules definition is a key step of these CA-based simulations. Indeed, "in the context of urban systems, we often have no idea what the "right" rules are" (Torrens, 2011). In our approach "right rules" should be thematically interpretable rules reproducing observed changes
This communication tackles the issue of CA rules creation and proposes to use Decision Tree (DT) to automatically design and calibrate them. The assumption lying behind the process is that land use composition of the neighbourhood has an influence on the transition of a cell.
The methodology is developed and tested on Strasbourg-Kehl cross border area with a CorineLandCover dataset Each cell is characterized by variables representing its neighbourhood and geographical location features. The main focus is on cells that underwent a transition from a non-urban to an urban land use in order to address the urban development issue. Results obtained using the decision tree help to create a set of transition rules based on information about the type of neighbourhoods that lead to urban transitions. The efficiency of the DT transition rules sets is evaluated comparing observed land use cover evolution from CorineLandCover database and CA based simulated data.

***Keywords**:* Cellular Automata; Decision Tree; Spatial simulation**;** Urban planning