Thesis Progress Meeting

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Achieved Work (by projects)

- Biblio/Meetings/Organisation [0.5w]
- Seminars : Cartha-géo-prisme ; mandatory English course [0.8w]
- Memoire [2.2w] (ETA 2w)
- Cybergeo Project [1.8w] (ETA 0.5w)
- Network-Density Statistics [1.2w] (ETA 0.5w)

Subject Construction

Definition of Territorial Systems ?

$\rightarrow$ Raffestin Human Territoriality [Raffestin, 1988] to introduce the subject

$\rightarrow$ Privileged role of Networks, following Dupuy *Territorial Theory of Networks* [Dupuy, 1987]

$\rightarrow$ Debate on Structural Effects of Transportation Networks still active today [**?**]

From Static Correlations to Dynamical Correlations

Assumptions on the spatio-temporal stochastic processes $Y_i\,[\vec{x}, t]$:

1. Local spatial autocorrelation is present on a maximal span of l_ρ : for any $\vec{x}$ and t, $\left|\rho_{\|\Delta\vec{x}\| < l_\rho}\left[Y_i(\vec{x} + \Delta\vec{x}, t), Y_i(\vec{x}, t)\right]\right| > 0$.

2. Processes are locally parametrized : $Y_i = Y_i\,[\alpha_i]$, where $\alpha_i(\vec{x})$ varies with l_α, with $l_\alpha \gg l_\rho$.

3. Spatial correlations between processes have a sense at an intermediate scale l such that $l_\alpha \gg l \gg l\rho$.

4. Processes covariance stationarity times scale as $\sqrt{l}$.

5. Local ergodicity is present at scale l and dynamics are locally chaotic.

Road Network Simplification

OpenStreetMap Network

Next steps (until April 15th 2016)

- Theory exemplification, paper finalization [1w]

- Spatial ~~Econometrics~~ Statistics / Case study [0.5w]

- Cybergeo [0.5w]

- Wrap everything within a 1-year Memoire [1w]

References I

📄 Dupuy, G. (1987).
Vers une théorie territoriale des réseaux: une application au
transport urbain.
In Annales de Géographie, pages 658–679. JSTOR.

📄 Raffestin, C. (1988).
Repères pour une théorie de la territorialité humaine.