

## Advanced Research Seminar on Geoinformatics –

INPE 2016

### Assignment #3 – An essay on “Geographical Fields”

In this assignment, you will first consider the notion of a field (or coverage, in OGC’s jargon). First read the entry about geographical fields at Wikipedia: ([http://en.wikipedia.org/wiki/Field\\_\(geography\)](http://en.wikipedia.org/wiki/Field_(geography))). Then, read the four papers in following order: Couclelis, Kemp, Ferreira et al. and Camara et al.

The Couclelis paper is one of the first theoretical perspectives comparing the ‘object’ and ‘field’ visions of the geographical world. It is a great paper that deserves to be read many times. Kemp’s paper discusses the different representations of fields and the conversions between those representations. Ferreira et al. consider that observations are the basis for our cognition of the world and organise observations about the geographical world in three main types: time series, trajectories and coverages. Câmara et al. further develop these concepts and present a generalised notion of field, that builds on the previous works.

Please answer the following questions:

1. What are geographical fields and what is their importance? What is the origin of the term ‘fields’? Why do we use ‘fields’ to refer to natural landscapes?
2. What kinds of geographical entities does Couclelis classify as fields? Why does Couclelis say: “*A field modelling framework is much better suited for modelling change*”?
3. In Couclelis’ view, are fields always represented as raster geometries in GIS? Does Kemp agree with this view? According to Kemp, what are some possible geometries for representing fields?
4. What are the kinds of fields identified by Ferreira et al.? Are these types exhaustive?
5. What are the similarities and the differences between the definitions of fields given by Camara et al. and by Kemp?
6. Is the definition of fields proposed by Camara et al. consistent with the definition of fields used by Couclelis?
7. How does the OGC represent fields using the “coverage” concept? What is the author that presents the view closer to the OGC perspective: Couclelis, Kemp, Ferreira or Camara?