

# Gradient

Is called gradient the variation of intensity of a phenomenon per unit of distance between a place and a given centre (or axis). It is the case for example with density gradients which develop around a city centre, gradients of population, facilities, shops, services, gradients of land prices, etc. gradients of population which appear on either side of some traffic ways or else starting from a coast, etc. Geographical gradients are the expression of the fact that places belong to fields of forces operating on different geographical levels.

This particular form of spatial distribution relates to properties relative to the geographical situation of places, and to the determining role for these places of [distance](#) to a particular place remarkable for its attraction (or repulsion) strength, for its ability to polarise and to diffuse in its neighbourhood. The gradient renders an image of the role played by distance in all spatial interactions and, beyond, of its effects on the characteristics of places which depend on these interactions. As exchanges and influences between two places decrease with distance, the distributions of a very large number of objects organise themselves in geographical space in the form of gradients constituted around a centre or else, on either side of an axis.

Due to importance of such gradients on all geographical levels, a very large number of modelling approaches have attempted to define their form. The approach consists in defining a spatial distribution as a function of the distance which separates the places where the observed objects are located and the centre or the axis whose structuring force is showing in the considered distribution. The selection of the interaction function has to take into account the spatial specificities of the phenomenon to which the spatial distribution is related. Different functions have been explored in order to formalise this decrease of interaction along with distance. For what concerns spatial functions, it should be referred to spatial interaction.

The idea of spatial difference and of discontinuity is always associated with existence of a gradient in geographical space. Gradients are an organised form of the heterogeneity of geographical space.

## Bibliographie