

THE ROLE OF MAP ALGEBRA IN SPATIAL INFORMATION ANALYSIS

Akli FUNDO¹, Shkëlqim KUKA²,

¹ Faculty of Mathematic Engineering and Physic Engineering, Tirana Polytechnic University,
e-mail: aklifundo@yahoo.com

² Faculty of Mathematic Engineering and Physic Engineering, Tirana Polytechnic University,
e-mail: sh.kuka@fimif.edu.al, sh.kuka@gmail.com

Abstract

The mathematical knowledge needed when they have to deal with spatial information systems. In this framework also the role of algebraic structures is of a big importance.

Perhaps the most usable of algebraic structures at Geographic Informations Systems (GIS) is Map Algebra.

Map Algebra is a high-level computational language used for performing cartographic spatial analysis using raster data. Simply put, Map Algebra is math applied to rasters, a practice that's possible because rasters are geographically referenced arrays of numbers.

In a map algebra expression, the operators are a combination of mathematical, logical, or Boolean operators (+, >, AND, tan, and so on), and spatial analysis functions (slope, shortest path, spline, and so on), and the operands are spatial data and numbers.

Map Algebra is being implemented at data sets that we referred to like: coverage, shapefiles, grid or layers.

In this paper there are implemented the tools of map algebra (ArcGis, Qgis) into a proper given project.

Keywords: *Gis, Map Algebra, Raster, Boolean operators, shape files.*