

## ONE THE EXTRACTION OF THE MORPHOLOGICAL CHARACTERISTICS OF STREAM FROM DIGITAL MAP BY GIS

In studies of hydrology and surface drainage, it is important to be able to delineate stream channel and ridge networks, contributing area to any point on paths of water, starting from any point on the topographic surface. The manual handling of these problems is highly laborious, time-consuming and prone to many errors.

GIS is very useful to automatically map the stream channel and divide networks of a watershed. This study is an approach to automatically extract map, and encode the spatial structure of drainage basins from digital map. The goal of these study is to produce stream channel such that the divides completely partition the watershed into drainage subbasin polygons. Their explicit relation to the drainage network may be exploited to construct an efficient hydrologic information system. Also in this study, the stream morphological characteristics are analyzed based on the Horton's three law on the morphology of a stream : the law of stream number, the law of average stream length and the law of average stream slope.