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COMPARATIVE ANALYSIS OF MANUAL AND AUTOMATICS CARTOGRAPHIC PRODUCTS: THE CASE OF THE SLOPE CHART

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With the advent of computer, the manipulation of maps using Geographic Information Systems (GIS) was made possible. Geographic Information System can receive various data, from various sources, in a same system pattern that can be constantly updated, enabling the user to apply optimized techniques based on diagnostics. In general, the main advantages offered by GIS technology are agility and accessibility. Formerly, the processes for organizing and managing information were slow, laborious and, consequently, error-prone. The errors could become ever bigger because not everyone had access to the original database, and by making use of already manipulated data, the errors of this previous use would be summed up successively. Although, in GIS it is possible to work on original data thus, errors from this traditional method of working on maps are minimized. Through GIS it is possible to access all available information, perform adjusts and simultaneous crossovers, allowing the monitoring theme variation by need of a single technician with a computer and access to the necessary database, providing spatial information that becomes useful in the context they were designed for, selecting and organizing them. Despite these facts, GIS also guarantees integrity and reliability in data management due to its capacity of centralizing them in a single place, that way providing an efficient, fast and trustworthy environment so that the user may have access to the information he needs. Thus, a GIS is an important tool to support data administration and management, for its capacity to potentiate decision makings, especially when the volume of information to be judged is extensive and provided from a series of different sources; therefore, it automates complex operations with superior precision at final results and significant time saving compared to traditional procedures. According to CÂMARA and QUEIROZ (2001) the functions and main characteristics of GIS indicate an interdisciplinary perspective of its use due to the multiple means of use this technology provides. Therefore, this technology is ever more present on a variety of planning areas and, on the planning for use and occupation of geographic space, it is extremely relevant to the population, for the management of rural areas and the use of urban land demands, indispensably, information on land slope, as well as the recognition of possible movements of superficial formations. There are various products used to characterize the topography of the land, the declivity chart being among them and which's main function is to evaluate the slope of the land (CUNHA, 1999 apud DAVIS JUNIOR. C. A. 1997). On the drafting of the declivity chart, altimetric elements such as level curves and elevation points, which are linear and fictional point elements, respectively, are necessary in order to translate, two-dimensionally in a surface, a tridimensional phenomenon, representing the topographic surface precisely. (GRANELL-PÉREZ, 2004). This study was performed in a selected area of the State University of Maringá campus. The purpose was the establish a comparison between handmade slope charts and those generated by the automated software SPRING. Since there are diversions on the plotting means of these charts, handmade and computer based softwares, this work is justified by the fact that it results in two distinct products for a same area of study.