

Hydrologic Data Processing Technology at the Southwest Watershed Research Center - Past, Present and Future

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Abstract

The evolution of automated data processing at the Southwest Watershed Research Center has paralleled the revolution in electronics, computer hardware, operating systems, and software design. The technology has progressed from mainframe computers, keypunch machines and electro-mechanical analog-to-digital converters, through minicomputers and ASCII terminals, to personal computers, digitizing tablets and graphical user interfaces. The data sources, however, have until recently remained the same: mechanical recorders driven by mechanical clocks. The equipment, software, and data reduction practices employed at each stage of this technological progression is reviewed. The impact of technology on the degree of human labor required, on accuracy and precision in the analog-to-digital conversion process, on strategies to address data storage limitations, and on the potential for human error will be examined. Finally, there is a look ahead to some of the challenges presented by new types of data streams; those generated by electronic sensors connected to programmable dataloggers.

Keywords: hydrologic data, data processing, analog to digital conversion