Title	**Estimating the hazards of water erosion by using Remote Sensing and Geographic Information Systems in The Basin Daihachiga, Takayama city, Gifu Prefecture, Japan**		
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Water erosion is defined as soil erosion and physical degradation of the landscape over time. The process begins when soil particles are separated from their original configuration by the forces of erosion of rainfall by splash, sheet, rill or gully, after that soil particles can be transported by overland flow in rivers by has networks. The Daihachiga basin is considered to be the most important water resource of Takayama city as the basin contains many natural resources, which enable substantial agricultural development.

The researcher depends on Gavrilovic's model; Potential Method Erosion (EPM), which was designed for mountainous areas, to determine the surface water erosion hazards in the basin. This model has been applied using remote sensing (RS) techniques and Geographic Information System (GIS).

It was possible to calculate the credibility of the basin as well as the annual erosion rate for the whole basin and sub-basins, based on pixel unit calculations. According to digital elevation model (DEM), gradient model of the watershed was prepared too, and it was used for some Morphometric parameters.

It is clear that the slope of the hills area at the foot of the mountain range towards the outlet of basin affects the flooding movement as the result of the geological structure of the basin, and the steep slopes, vegetation caver, which are important factors in slowing the runoff, and the weak management for retarding floods effect on soil erosion.

Key words: Gifu prefecture; Water Erosion; RS; GIS; DEM; EPM

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