JGrass: The Horton machine

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Geographical information systems (GIS) are now widely used in hydrology and geo-morphology to automate basin, hillslope, and stream network analyses. Several commercial GIS packages have incorporated more common terrain attributes (e.g. slope, aspect, curvature, and wetness index) and terrain analysis procedures (e.g. basin and stream network extraction). These software packages are, however, often prohibitively expensive. JGrass instead is free and Open Source. JGrass is designed to meet the research needs for academic scientists while being simple enough in operation to be used for student instruction and professional use. It is a standalone GIS that has much of the spatial analysis functionality typically found in GIS packages. However, it is also capable of advanced modelling of catchment processes since it is endowed with an extensive dedicated set of tools. JGrass is developed in Java that ensures the portability in all operating systems running a Java Virtual Machine, as for example, Windows, Linux and Mac OsX.