Providing R functionality through the OGC Web Processing Service

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The new Web Processing Service (WPS) 1.0 standard, recently released by the Open Geospatial Consortium (OGC, opengeospatial.org), specifies how GIS calculations can be made available via the Internet, as web services. Operations can be as simple as adding two map layers or as complex as running a full hydrological model. This opens the possibility of providing the spatial analysis functionality available in R also through this interface. In this paper we will show how a connection between the open-source Java-based WPS reference implementation from 52North (52north.org) and R can be established, and how R functionality can be exposed through an OGC-compliant web service. The question how to exchange spatial datasets between Java and R is of special interest.