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Smart "geomorphological" map browsing - a tale about geomorphological maps and the internet

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With the digital production of geomorphological maps, the dissemination of research outputs now extends beyond simple paper products. Internet technologies can contribute to both, the dissemination of geomorphological maps and access to geomorphologic data and help to make geomorphological knowledge available to a greater public. Indeed, many national geological surveys employ end-to-end digital workflows from data capture in the field to final map production and dissemination. This paper deals with the potential of web mapping applications and interactive, portable georeferenced PDF maps for the distribution of geomorphological information.

Web mapping applications such as Google Maps have become very popular and widespread and increased the interest and access to mapping. They link the Internet with GIS technology and are a common way of presenting dynamic maps online. The GIS processing is performed online and maps are visualised in interactive web viewers characterised by different capabilities such as zooming, panning or adding further thematic layers, with the map refreshed after each task. Depending on the system architecture and the components used, advanced symbology, map overlays from different applications and sources and their integration into a Desktop GIS are possible. This interoperability is achieved through the use of international open standards that include mechanisms for the integration and visualisation of information from multiple sources.

The portable document format (PDF) is commonly used for printing and is a standard format that can be processed by many graphic software and printers without loss of information. A GeoPDF enables the sharing of geospatial maps and data in PDF documents. Multiple, independent map frames with individual spatial reference systems are possible within a GeoPDF, for example, for map overlays or insets. Geospatial functionality of a GeoPDF includes scalable map display, layer visibility control, access to attribute data, coordinate queries and spatial measurements. The full functionality of GeoPDFs requires free and user-friendly plug-ins for PDF readers and GIS software. A GeoPDF enables fundamental GIS functionality turning the formerly static PDF map into an interactive, portable georeferenced PDF map. GeoPDFs are easy to create and provide an interesting and valuable way to disseminate geomorphological maps.

Our motivation to engage with the online distribution of geomorphological maps originates in the increasing number of web mapping applications available today indicating that the Internet has become a medium for displaying geographical information in rich forms and user-friendly interfaces. So, why not use the Internet to distribute geomorphological maps and enhance their practical application? Web mapping and dynamic PDF maps can play a key role in the movement towards a global dissemination of geomorphological information. This will be exemplified by live demonstrations of i.) existing geomorphological WebGIS applications, ii.) data merging from various sources using web map services, and iii.) free to download GeoPDF maps during the presentations.