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A pattern recognition web service for European floods

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Integrating large open data and emerging Information and Communication Technologies in flood risk management may well be the next crucial stage in supporting robust, evidence-based decision-making. In an era where flood risk management policies, such as the EU Floods Directive, are increasingly demanding and challenging, it is clear that authorities and stakeholders need innovative ways to assess flood risk.
Pattern recognition techniques applied to remote sensing data, for instance Digital Elevation Models, offer the opportunity to fill existing gaps in flood risk assessment. Exploiting such methods, we present a preliminary, raster-based flood classification web service that could become an important component of any future flood risk decision supporting system. Even though the service may never replace detailed hydrologic and hydraulic modelling, it provides the possibility for users to consistently and cost-effectively extend their local flood study to larger scales and in data-scarce regions (e.g., ungauged basins).
The system was conceptualized in such a way that it has minimum data and knowledge requirements, and functions independently of data being sparse or not. Improvements and upgrades to the system are here discussed.
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