



A multilayer informative system for river morphologies study

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The objective of this work is to elaborate a “glossary of the fluvial morphologies”, through the identification and the validation of the fluvial morphologies, collecting within a global synthesis the studies about river instability and intervention criteria on the drainage basin. The glossary could represent a useful tool to address the stakeholders toward a better and correct planning of fluvial and peri-fluvial interventions according to the natural fluvial dynamics. It will be managed by a multilayer informative system where the first layer contains the definition and a brief comment for all the individuated morphologies in order to identify the main characteristics and principal phenomena. The increasing level is represented for a great number of morphologies by some reports that include a phenomenological description, photos and schemes, opportune methods of investigation and analysis, interpretative models and intervention criteria, coming from literature and developed during the present work. The third layer is constituted by schedules compiled for numerous study cases that allow to recognize hydraulic and geomorphologic characteristics of some river reaches. Finally, the last layer, the highest information level, is represented by a group of monographs relative to different morphologies, that propose the observation techniques and analytical and numerical models for the interpretation and simulation of the fluvial dynamics.

Some themes treated in the monographs are: the study of interaction between river flow and bridges piers in the alluvial rivers; the analysis of tracing dispersion phenomena in right and meandering rivers; the evaluation of the relation between the entropic parameter and the fluvial morphology; the study of the geomorphic and structural processes in landslide dam and the development of flood risk models in lowlands using

high resolution laser altimetry data.