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Landscape animation techniques combined with detailed elevation models allow the researcher to closely reconstruct the landscape form at small, medium and large scale, creating detailed images and videos of the features. The complexity of landscape can be perceived on screen in a guided visualization with the practical advantage of a modelling approach.

After the basic modelling step of reconstructing the terrain and its appearance, the process of exploration of the model allows the researcher to have selective access to the visual properties of landscape for a variety of purposes. In order to be effective in gaining knowledge and experience, the method of exploration is required to adapt to the specific objectives of the visualization Variables like the type of trajectory described by the movie camera and the degree of closeness to the form of terrain contribute to the design choices of landscape exploration.

In geomorphological studies we suggest that the method of exploration has to be based on the landforms. It should be precise and dedicated to the close framing of the landform, and utilize an essential trajectory that is as much as possible a function of terrain, leaving out secondary components related to appearance. It is advisable that the trajectory and the direction of viewing of the movie camera follow the natural lines of the landscape like valleys, ridges and coastlines, dynamically adapting to the elevation of the ground, so that trajectory becomes a close function of relief. Respecting these guidelines could reflect on the level of detail and definition of the spatial knowledge of the viewers of the video, although experimental studies are needed for the verification of this hypothesis.

The guidelines above have contributed to the creation of a video in computer graphics that is the general morphological setting of the Liguria region, based on a digital elevation model Shuttle Radar Topography Mission at 90 meters of resolution. The animation shows different areas of the region which are of specific interest for the analysis of the relationship between geomorphological conditions and the geological-structural setting. These areas are: Val Fontanabuona and Val di Vara in Liguria di Levante; the comb-shaped coastal valleys in the Imperiese; the carstic landscapes in Finalese in Liguria di Ponente; and in the appennines the area of S.Stefano d'Aveto, characterized by significant deep-seated gravitational slope deformations.

The model has been rendered using the a GIS for landscape visualization applying an elevation-based color scheme of cartographical appearance, so that the 3D forms could be enhanced by coloring as well as by shading. The video is an example of how landscape animation based on regional-scale terrain models and on exploration design guidelines constitutes a useful instrument in research and in teaching to visualize the characteristics of landforms.