format is intrinsically adaptive and preserves input details. The standard Delaunay TIN format was refined applying the DEST algorithm [Favalli and Pareschi, 2004]. The final DEM was obtained by painstakingly cleaning-up a heterogeneous input dataset as described in Tarquini et al. [2007].

The preparation of the TINITALY/01 DEM in the suitable tiled format and the following application of the ViCam software to obtain stereo views of the whole Italian territory (**Figure 5**) have been already described by Tarquini et al. [2011]. Here we just recall that the thorough DEM database in 5 m-cell size grid format occupy about 50 Gb of disk memory, resulting a perfect test case to verify the performance of our method. The obtained results can be viewed online at http://webgis.pi.ingv.it/.
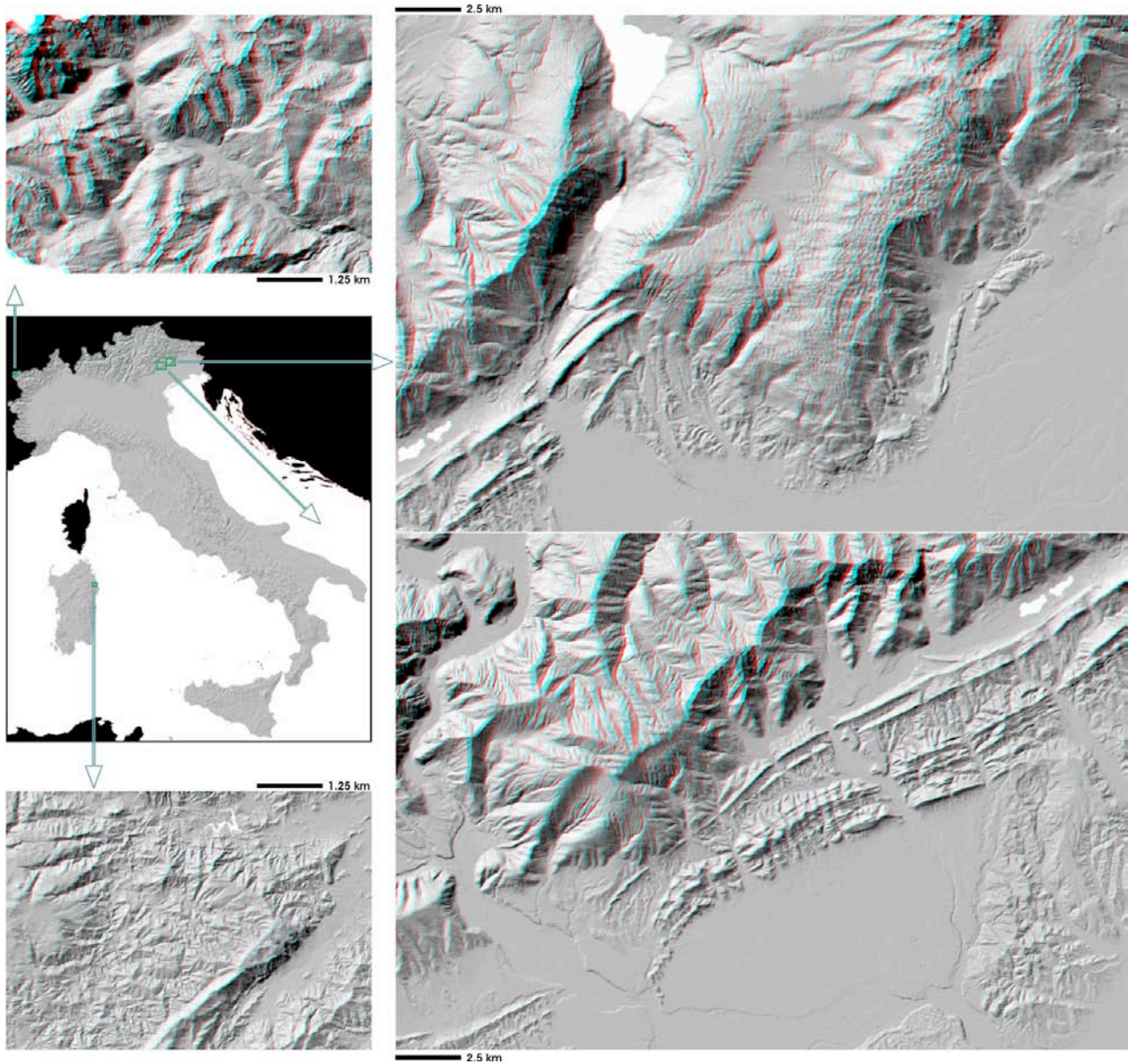

Figure 5. Anaglyph images obtained by viewing the TINITALY/01 DEM from an almost nadiral viewpoint. In this case glasses with green and red lenses for left and right eyes respectively are necessary.

3. Concluding remarks

The rapid development of Earth observation technologies and the availability of increasingly large amount of raster and elevation datasets [e.g. Hayakawa et al. 2008] boosted the development of a large spectrum of software focusing on dynamic and static 3-D visualizations of large DEMs and corresponding images. The result is the breakthrough of visualization engines which mostly uses compressed versions of the elevation datasets.

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