Real Time Fully Automatic 3D-Modelling of HRSC Landscape Data

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Abstract:
This paper presents a fully automatic 3D-modeling-process of the landscape data obtained by the High Resolution Stereo Camera (HRSC) assembled on an airplane. The input of this 3D-modelling-process is the huge 2.5D point-clouds resulted from the photogrammetric preprocessing and the output is a group of simplified colored meshes. The 3D-modeling-process consists of six steps: tilling with overlap, mesh generation, mesh simplifying, mesh cut, mesh merger and texture mapping. The whole process is fully automatic and is performed in real time. Validation of the method has been done on the reconstruction of various famous regions of Bavaria with tourist features.

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