

## **Paper Title: Applications of the terrain models in the urban eco-environment**

**Topic:** 2. complex study of urban eco-environment in the Western Transdanubia Region

**Preference:** poster presentation

**Keywords:** digital terrain model, topography, orthorectification, DTM in GIS, aerial laser scanning

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### **Abstract:**

Topography is a crucial field of each settlement's characteristic and development. Factors closely related to terrain conditions are: the rate of built-up, developed spatial structure, size and location of green areas within settlement, natural and artificial water surfaces of the city and other permeable land cover categories.

To all of these complex urban-ecological assessment different remote sensing materials, like aerial and satellite images with different resolution and accuracy and laserscanned materials can be applied efficiently. Raw images can be distorted different degree due to elevation differences. Before of photointerpretation to avoid distortions, the production of the horizontal projection done by using digital terrain model, so the accuracy of the obtained thematic data is highly influenced by digital terrain models used for orthorectification. Digital terrain models can be used further for GIS analysis, therefore the choice among the models produced by different technology (field measurement, cartometrical methods, photogrammetric methods, aerial laser scanning) is crucial. Our study aimed to compare several terrain model from different sources of the same area. During the model comparison we have extended our study to different model types, different resolution of models, to economic and accuracy issues and the applicability of the urban-ecological analysis.