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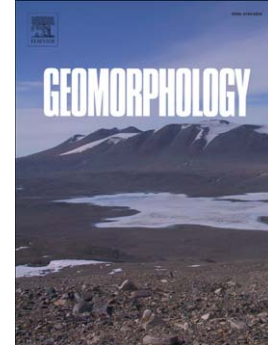
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Tímea Kiss, Márton Balogh, Károly Fiala, György Sipos

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Morphology of fluvial levee series along a river under human influence, Maros River, Hungary**Tímea Kiss^{a*}, Márton Balogh^a, Károly Fiala^{b*}, György Sipos^a**

^aDepartment of Physical Geography and Geoinformatics, University of Szeged,
Szeged, 6722, Egyetem u. 2–6, Hungary

^bLower Tisza District Water Directorate, Szeged, 6720, Stefánia 4, Hungary

*Corresponding author: Tel.: +36-62-544545; Fax: +36-62-4544158; E-mail: kisstimi@gmail.com.

E-mails: M. Balogh: baloghmarton.geo@gmail.com, K. Fiala: fialak@ativizig.hu, Gy. Sipos:
siposgy@gmail.com

Abstract

The development and morphometry of fluvial levees reflect the connection between channel and overbank processes, which can be altered by various human activities. The aims of this study are to investigate the morphology and spatial characteristics of fluvial levees and evaluate the role of some local- and catchment-scale human activities on their medium-term (150 years) development. This study applies LiDAR data along a 53-km-long reach of the Maros River in Hungary.

Six fluvial levee types are identified based on the beginning and end of their evolution. These levee types were generated by local nineteenth century channel regulation works (cutoffs) and mid-twentieth century channel narrowing, which was caused by gravel mining and water impoundment in the upstream sections. However, other human activities also influenced the development of active fluvial levees because their horizontal evolution could have been limited by embanked flood-protection levees or the widening of low-lying floodplain benches that were generated by channel narrowing. Additionally, revetment constructions influenced their vertical parameters as higher fluvial levees developed along the fixed banks. Generally, the older active fluvial levees are wider, while the younger active levees are narrower with steeper slopes but not always lower. On the low-lying floodplain levels

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