

# Accepted Manuscript

Integration of new and revised chronological data to constrain the terrace evolution of the Danube River (Gerecse Hills, Pannonian Basin)

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PII: S1871-1014(18)30043-8

DOI: [10.1016/j.quageo.2018.08.003](https://doi.org/10.1016/j.quageo.2018.08.003)

Reference: QUAGEO 960

To appear in: *Quaternary Geochronology*

Received Date: 21 March 2018

Revised Date: 31 July 2018

Accepted Date: 27 August 2018

Please cite this article as: Ruzsiczay-Rüdiger, Z., Csillag, G., Fodor, L., Braucher, R., Novothny, Á., Thamó-Bozsó, E., Virág, A., Pazonyi, P., Timár, G., ASTER Team, Aumaître, G., Bourlès, D.L., Keddadouche, K., Integration of new and revised chronological data to constrain the terrace evolution of the Danube River (Gerecse Hills, Pannonian Basin), *Quaternary Geochronology* (2018), doi: 10.1016/j.quageo.2018.08.003.

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27 **Abstract**  
28

29 Terrace ages deduced from diverse geochronological records yielded inconsistent data in the Danube  
30 valley in Hungary. The problem of discrepancies in the different chronological datasets has to be resolved  
31 before the Quaternary tectonic and climatic processes leading to valley incision and terrace formation may  
32 be properly evaluated.

33 To establish a more robust chronology of the Danube valley in Hungary, new cosmogenic nuclide- ( $^{10}\text{Be}$   
34 depth profiles,  $^{26}\text{Al}/^{10}\text{Be}$  burial durations and burial depth profile) and luminescence-based (pIRIR<sub>290</sub>)  
35 terrace ages were acquired and compared to revised paleontological and published U/Th and  
36 magnetostratigraphic data. All the applied geo-chronometers led to concordant terrace ages, with the  
37 exception of the U/Th method applied on travertine deposits covering terraces. U/Th ages predating the last

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