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[Poster]

Process-based insights into lateral channel migration and riverbank erosion under climate variability

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Abstract: Climatic drivers influencing the intensity of lateral channel migration and riverbank erosion processes operate through two main mechanisms: through their influence on hydrological variability (Aktar, 2013), and through long-term effects on other factors such as soil, vegetation, and anthropogenic activities within the river basin (Langović et al., 2024). Climatic causes should therefore not be examined separately from hydrological factors, as both groups of factors form part of the same cause-and-effect system. Considering them together provides a better understanding of changes in the intensity of riverbank erosion and lateral channel migration. Key climatic indicators include maximum precipitation, the number of days with rainfall exceeding 10 mm, and temperature fluctuations. Previous studies in the Kolubara and South Morava River basins (Dragićević et al., 2014; Langović, 2024) have demonstrated the significance of these indicators, primarily through their influence on hydrological conditions and associated extreme events. Their inclusion in studies of riverbank erosion and channel morphodynamics can improve the interpretation of temporal changes in process intensity and help to explain variations associated with climate variability. Such knowledge may also support strategic planning and the development of measures aimed at reducing the impacts of channel instability on environment and local communities.

Keywords: riverbank erosion, variability, climate change, Serbia

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