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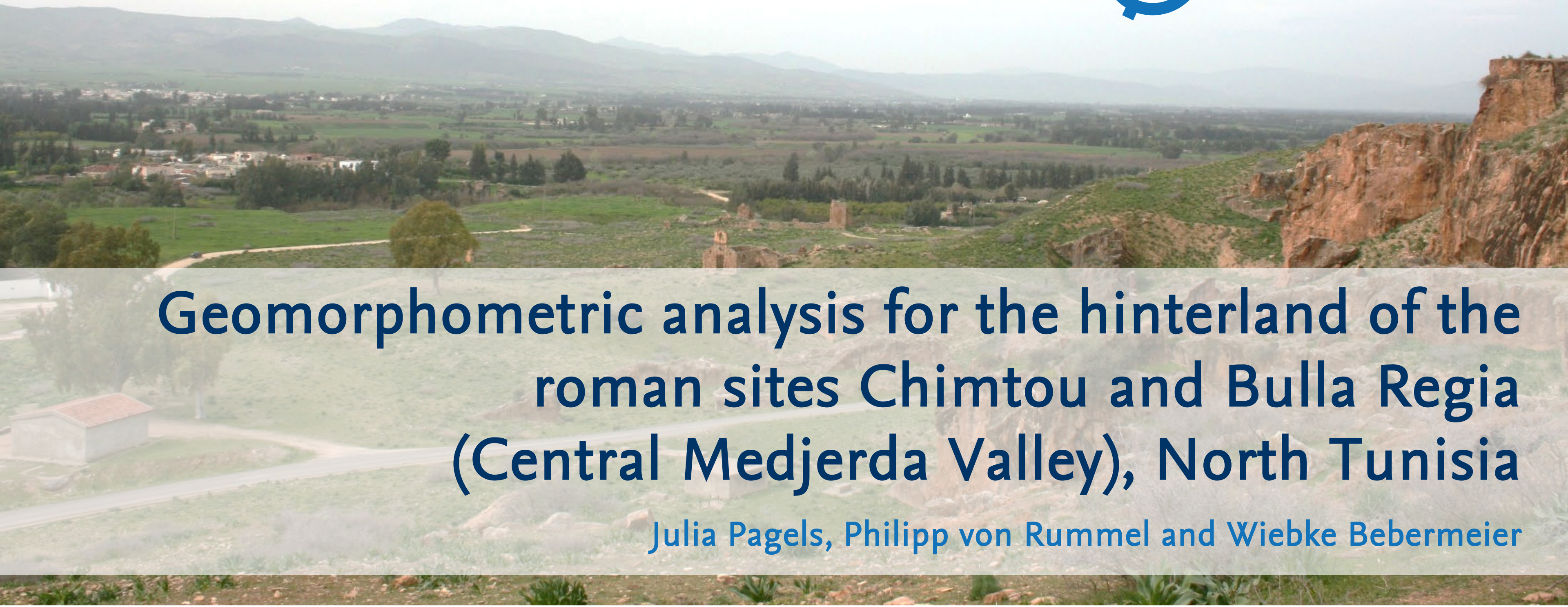
EGU General Assembly 2022



Geomorphometric analysis for the hinterland of the roman sites Chimtou and Bulla Regia (Central Medjerda Valley), North Tunisia

Julia Pagels, Philipp von Rummel and Wiebke Bebermeier

Funded by DFG Deutsche Forschungsgemeinschaft German Research Foundation

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DFG-Projekt „Conquest, Ecology and Economy in Islamic North Africa: The Example of the Central Medjerda Valley“ (ID 429040062)

Location of the Medjerda Valley

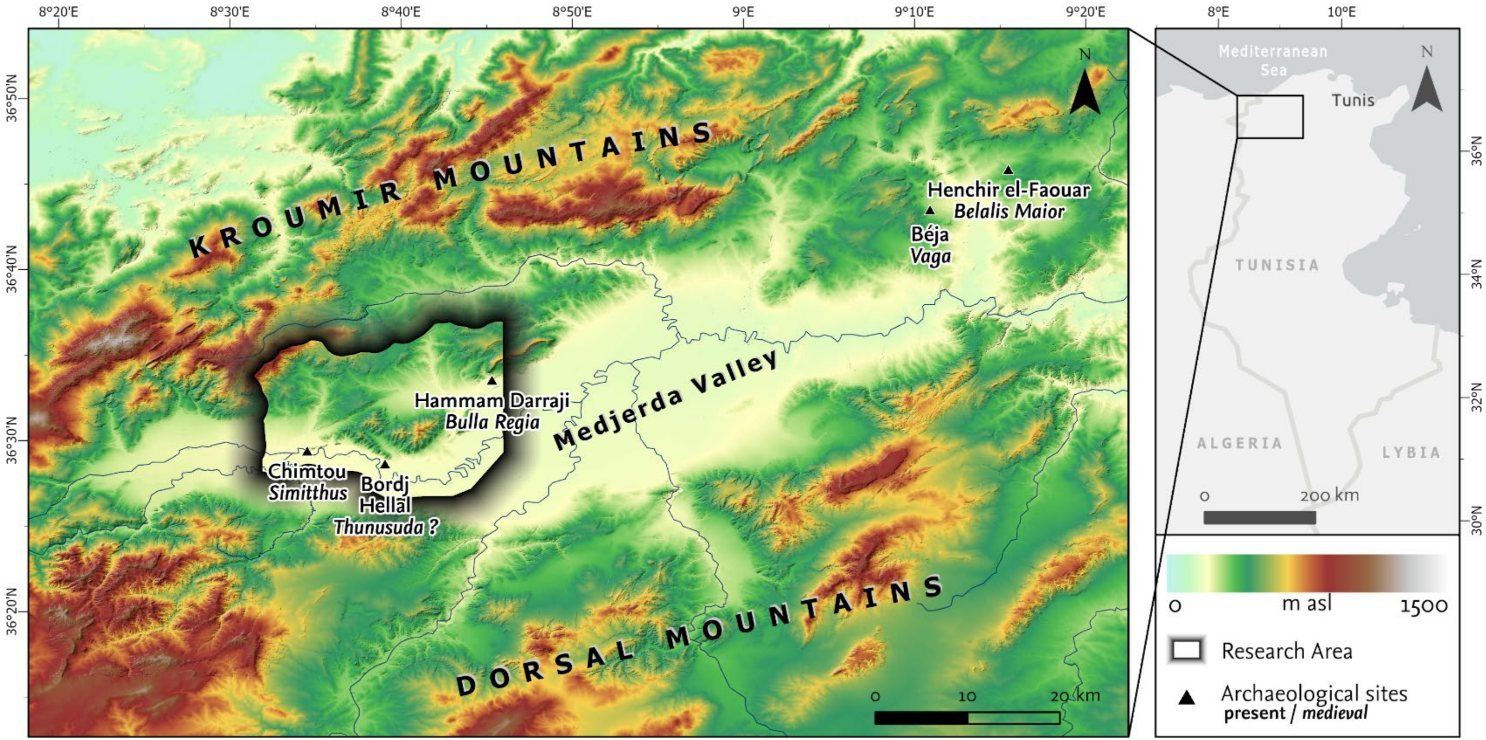


Fig. 1: Location of the Medjerda Valley and archaeological research sites in Tunisia, elevation data: TanDEM-X, projection: WGS 84

Method: Geomorphons

Classification and mapping of landform elements from a DEM based on the principle of pattern recognition

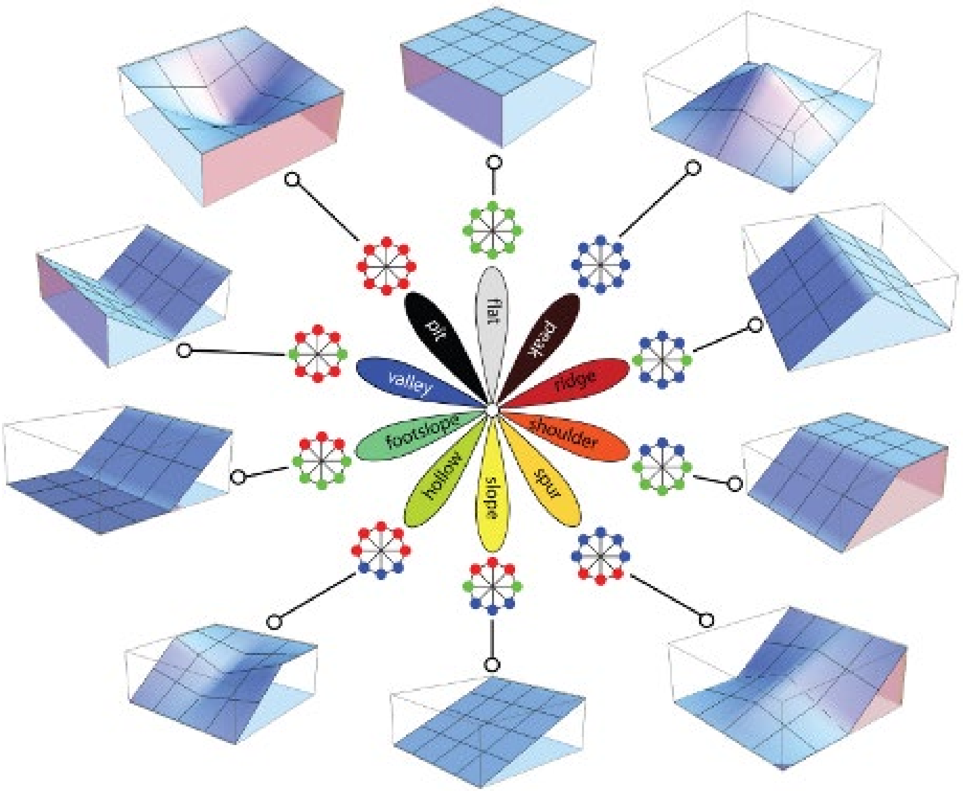
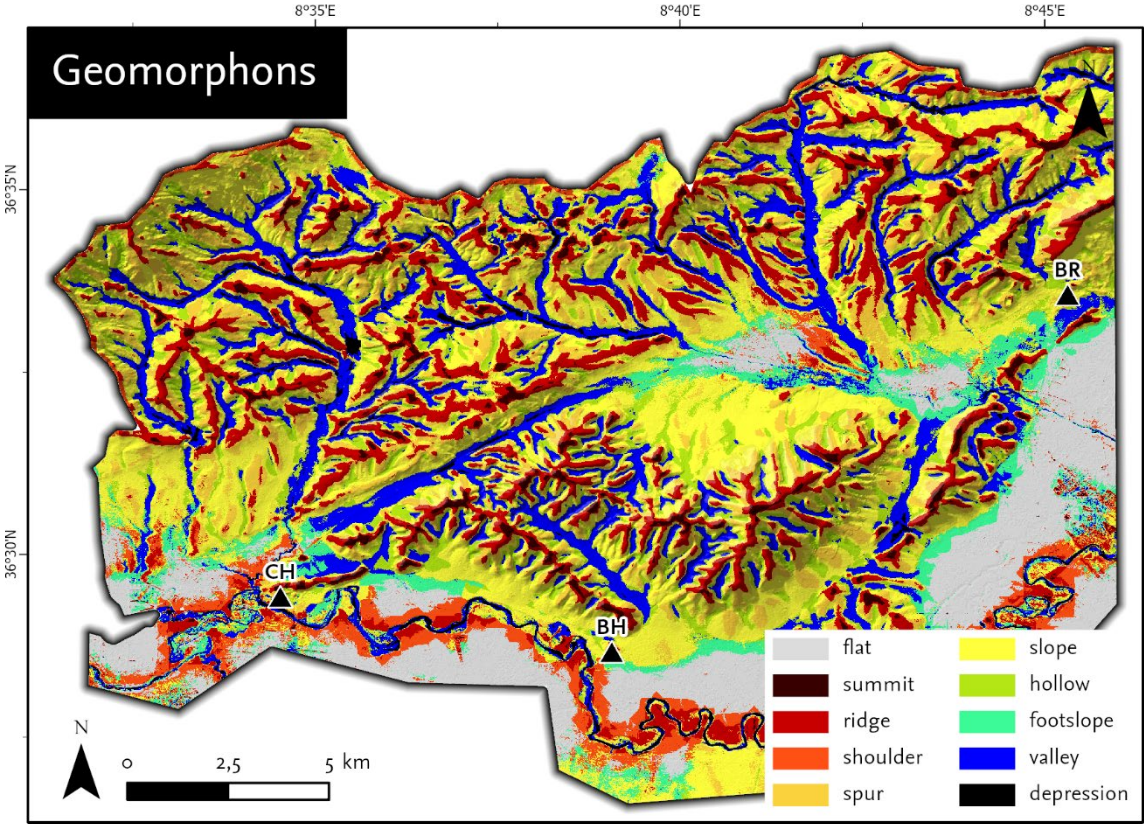


Fig. 3: Classification of landforms in the Geomorphons algorithm (Jasiewicz & Stepinski (n.d.) r.geomorphon)

Results: Geomorphons



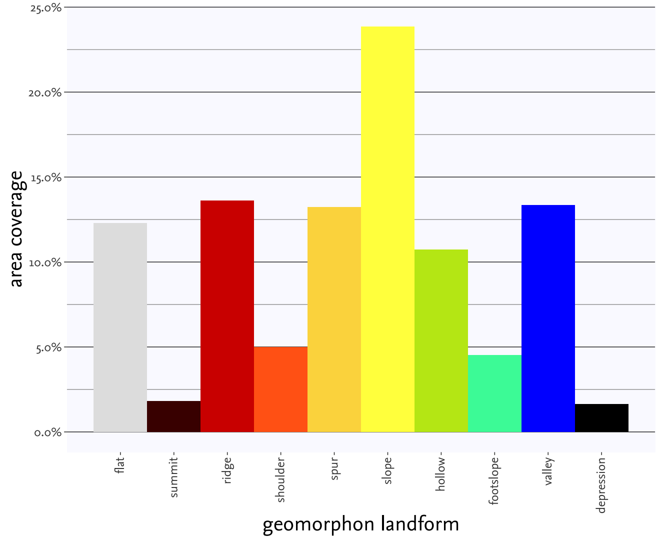


Fig. 4: Geomorphons classification for the research area (left) and its spatial distribution (right)

Results: Geomorphons

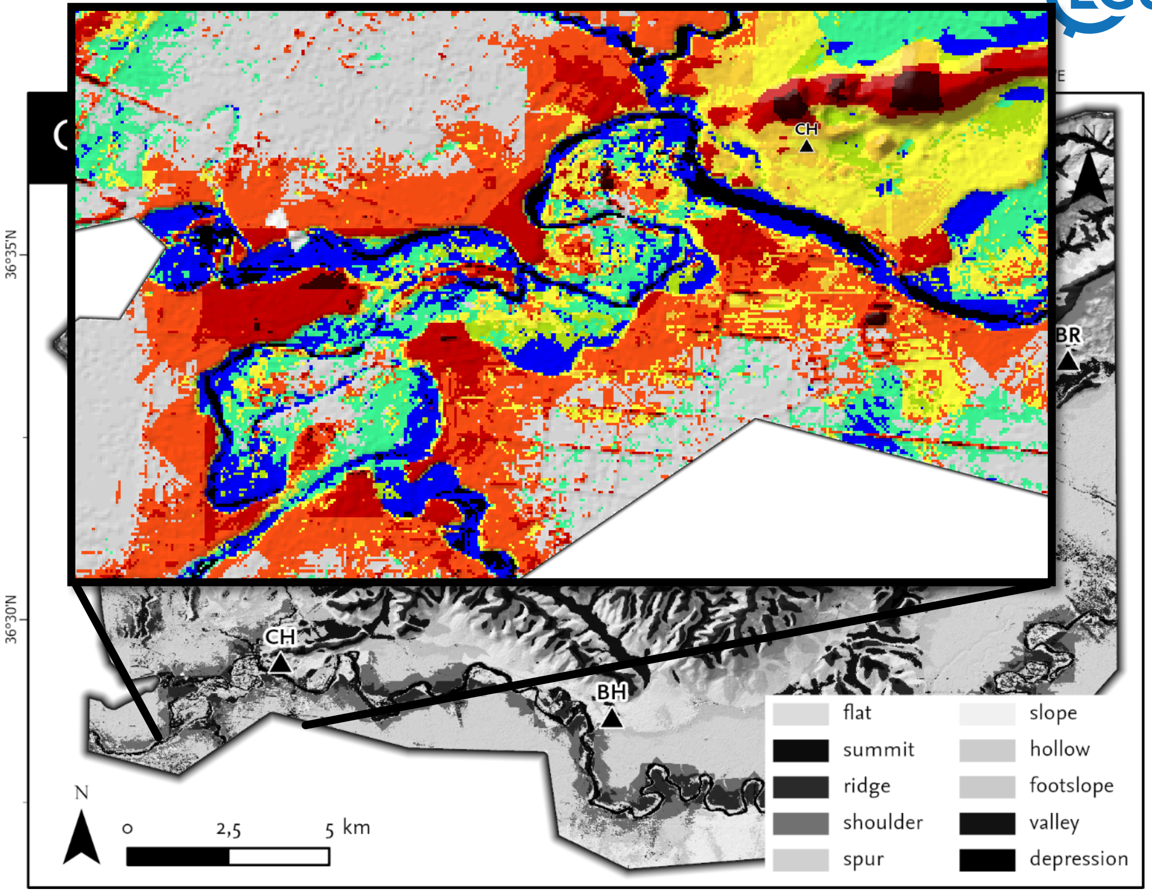


Fig. 4: Geomorphons classification for the research area (left) and its spatial distribution (right)

Method: USPED model (after Mitasova et al. 2014)

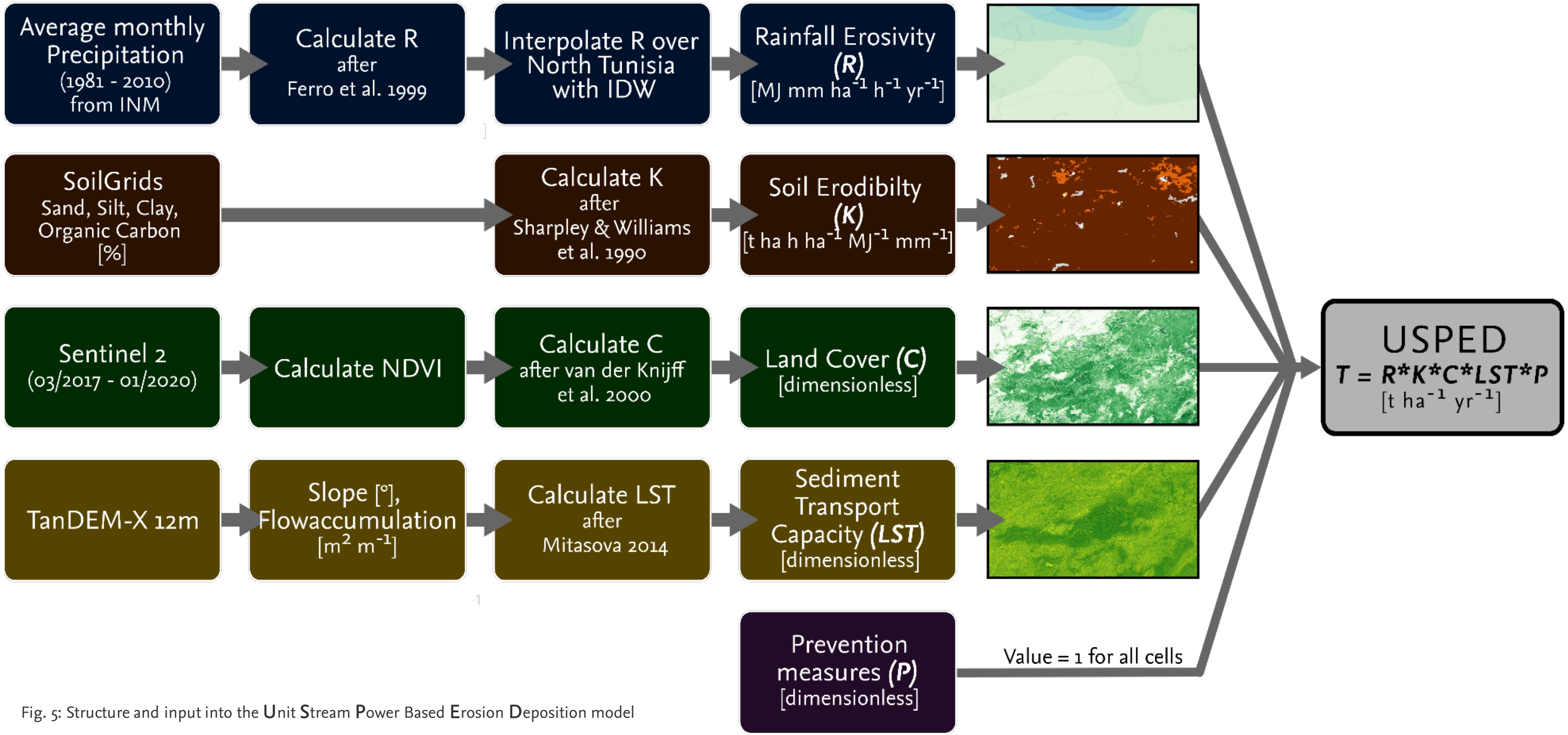
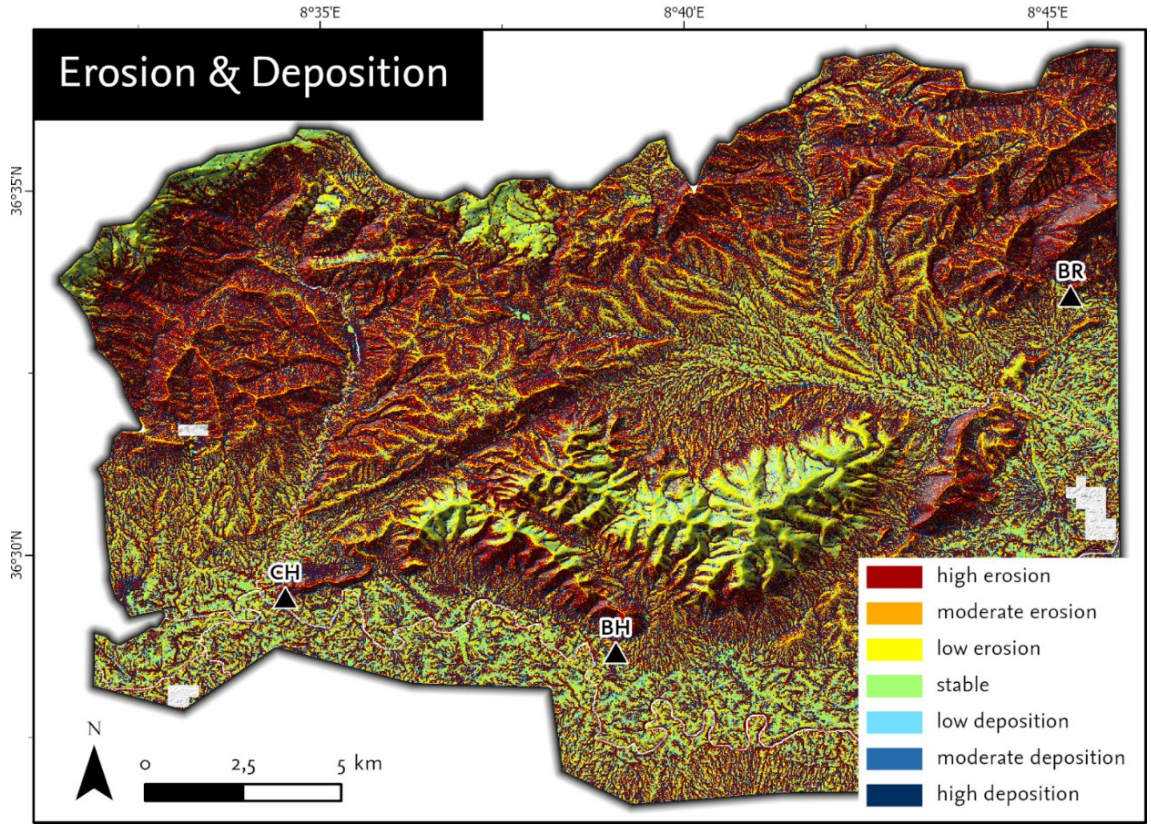


Fig. 5: Structure and input into the **U**nit **S**tream **P**ower Based **E**rosion **D**eposition model

Results: USPED model



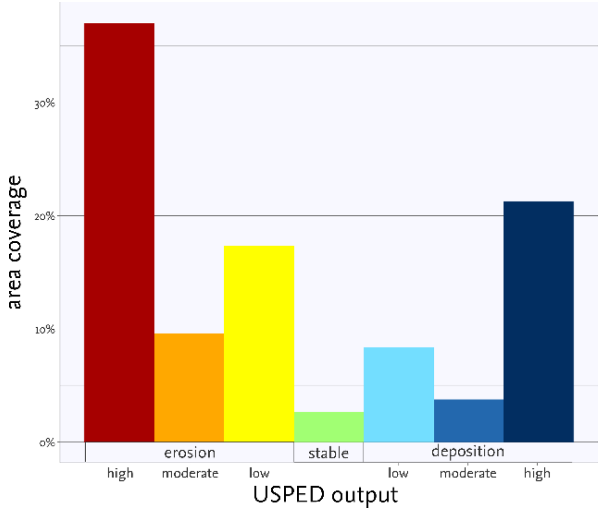


Fig. 6: Outputs of the USPED model for the research area (left) and its areal distribution (right)

Results: USPED model

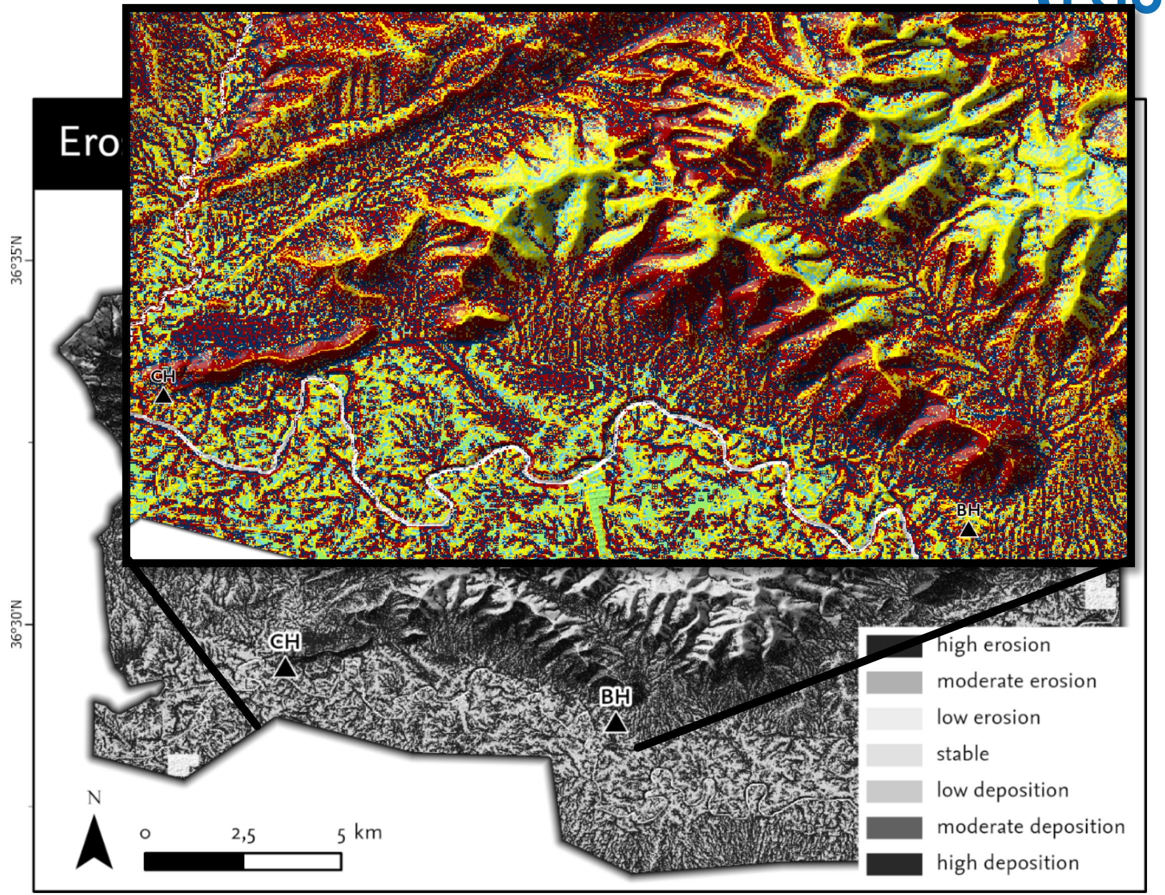


Fig. 6: Outputs of the USPED model for the research area (left) and its areal distribution (right)

Conclusion

Coupling the geomorphometric landform classification with the USPED model contributes to a deeper understanding of the process dynamics in the hinterland of archaeological sites - especially when the study area is inaccessible for a longer period of time - and provides a good basis for a subsequent geographical survey of the area.

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Thank you!

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