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Climatic and anthropic forcings on the Holocene morpho-sedimentary evolution of the Cosson River (Loir-et-Cher)

A. Lacoste¹, C. Laplaige², F. Hirschberger¹, I. Gay-Ovejero¹, K. Coulibaly¹, A. Muracciole¹, J.-P. Bakyono¹, X. Rodier²

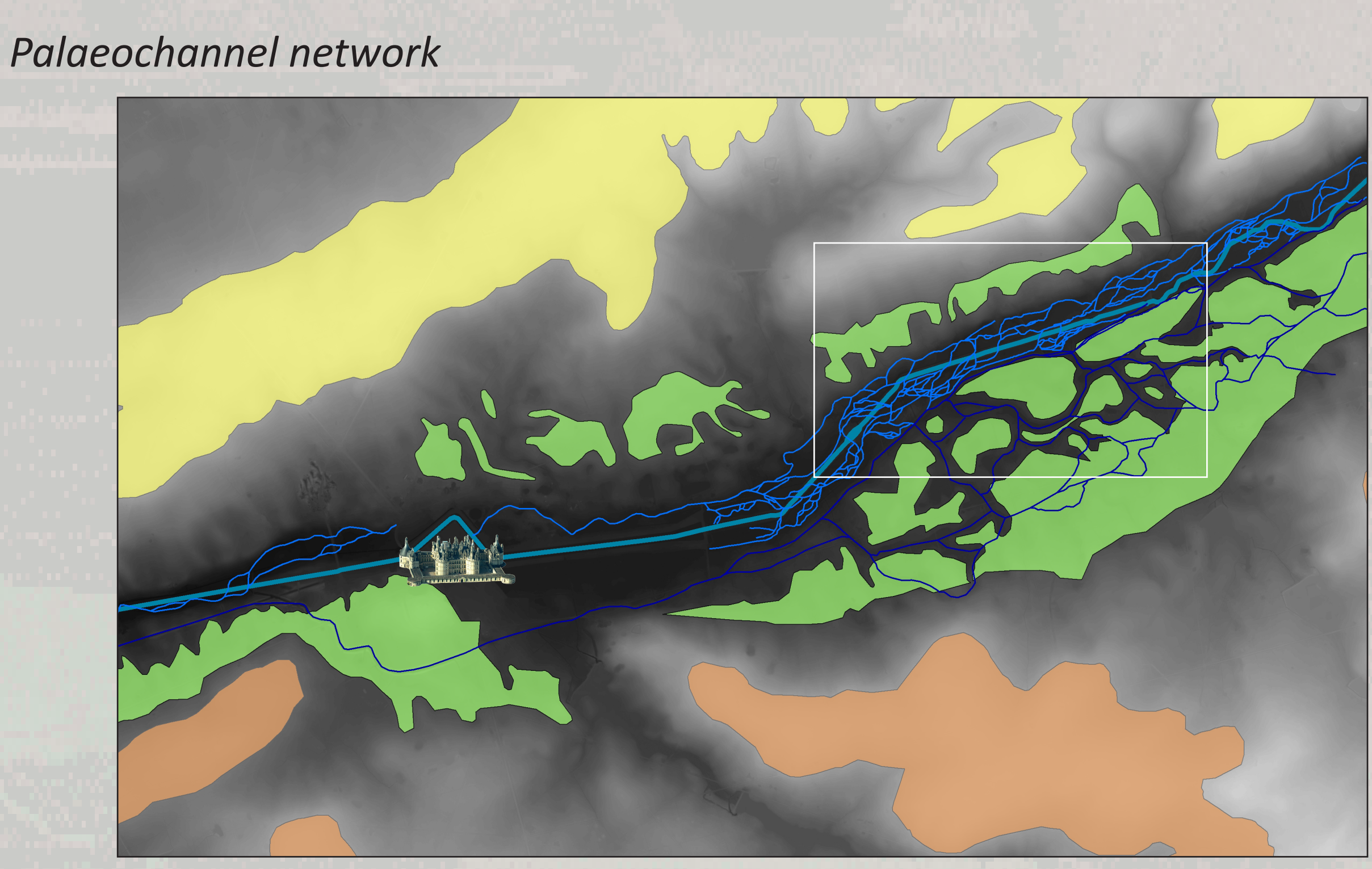
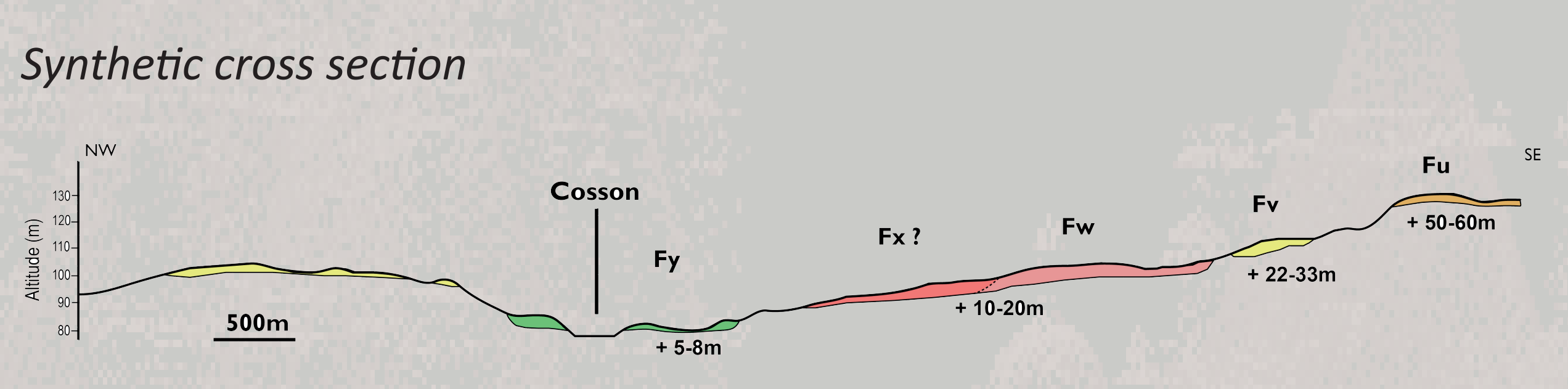
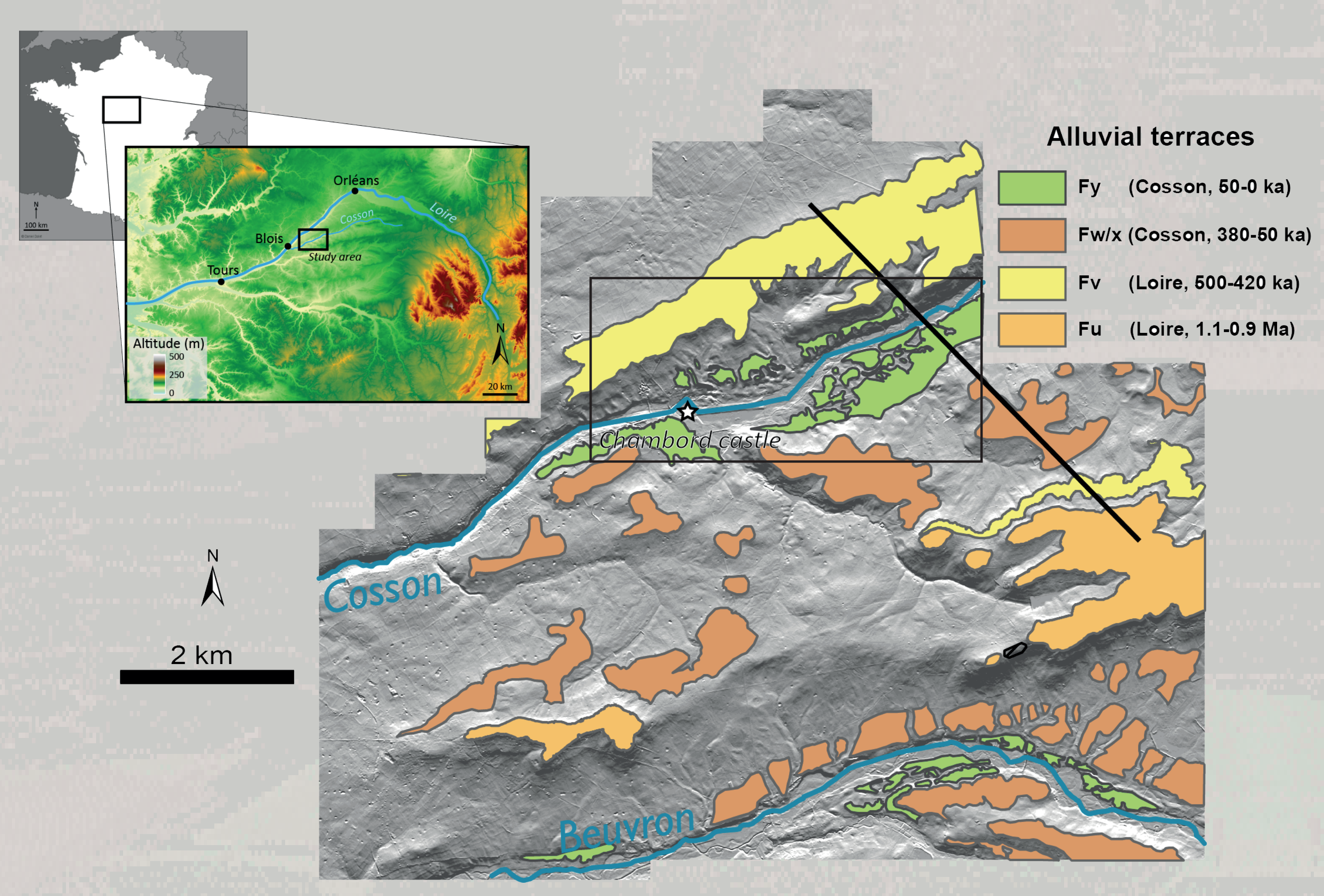
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Transport Solide et Morphodynamique des Rivières, Villeurbanne, 8-9 Nov. 2017

How to trace back the late Pleistocene/Holocene morpho-sedimentary evolution of the Cosson River ?
Is it possible to differentiate climatic from anthropic forcings in such an evolution ?

The Chambord Domain

Terrace mapping and hydromorphological analysis from high-resolution DEM (airborne LiDAR)



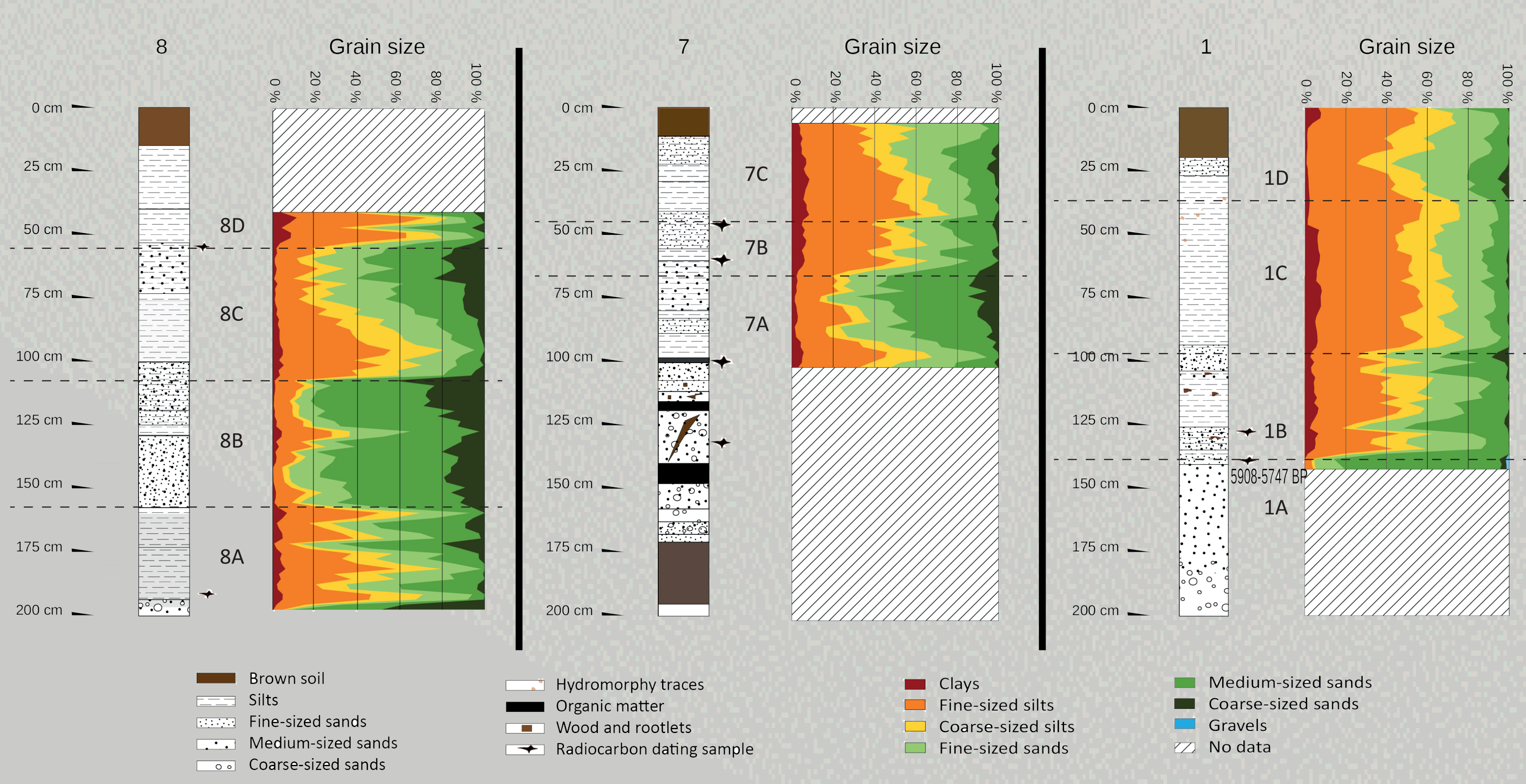
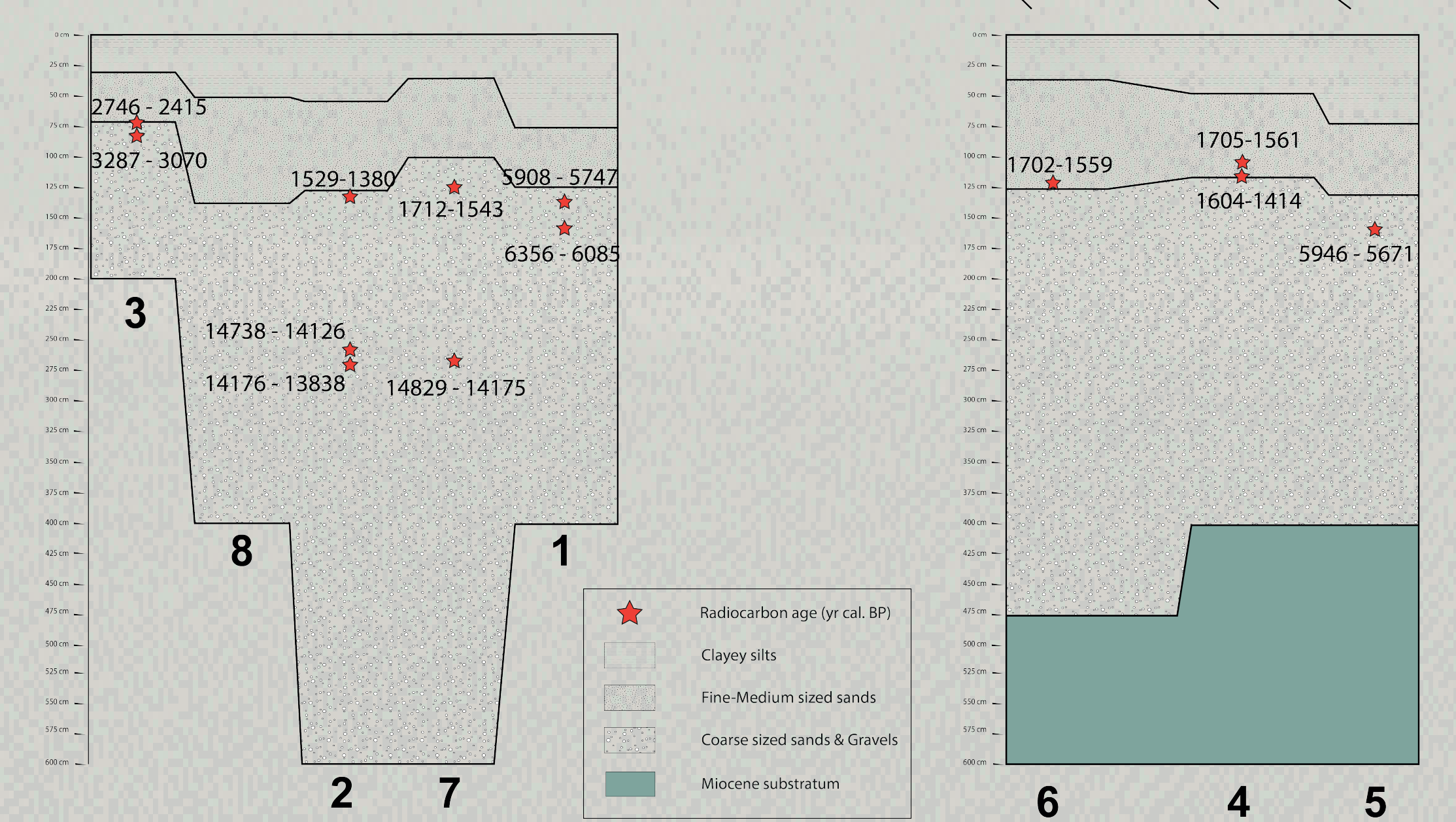
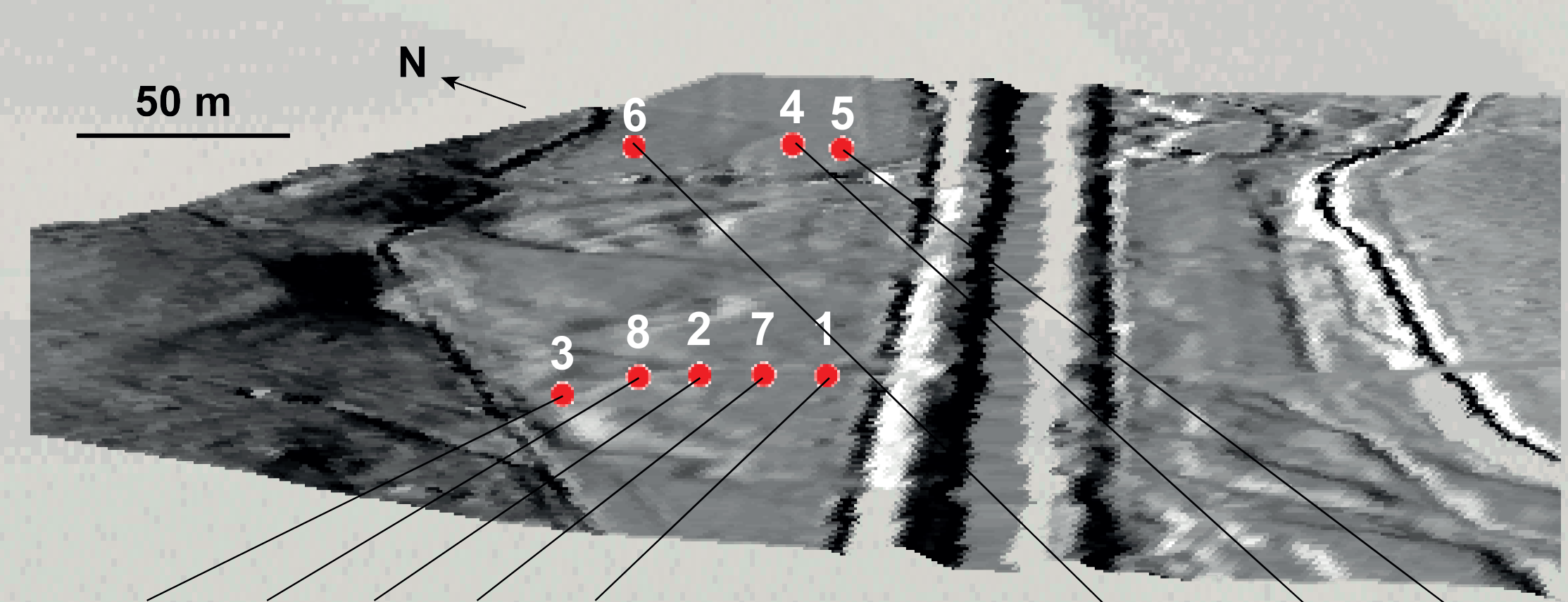
- Cosson River: tributary of the Loire River since the early Saalian Period (400 ka, Fw deposits)
- Channelling for castle-building purposes (15th-16th centuries)
- Evidence of Weichselian-Holocene multi-channel hydrological network

1st results - Sedimentology and Dating



Key dates:

- Weichselian - mid-Holocene (Bronze Age) coarse sedimentation, high fluvial energy
- Roman peak towards finer sediments



Distinct Sedimentation phases:

- lower units of high-frequency alternances (8A, 1B)
- periods of higher channel energy (8B, 7A)
- finer sediments with time?

Limits:

- hard to date: low organic content, clayey sediments
- challenging correlations: no magnetic data
- low geophysical contrast between units

The morpho-sedimentary evolution of the Cosson river is hard to constrain

Need of further data (ages, palynology, organic matter analyses) to discriminate climatic from anthropic influences