



Biogeomorphodynamic of fluvial-tidal levees and accommodation space infilling

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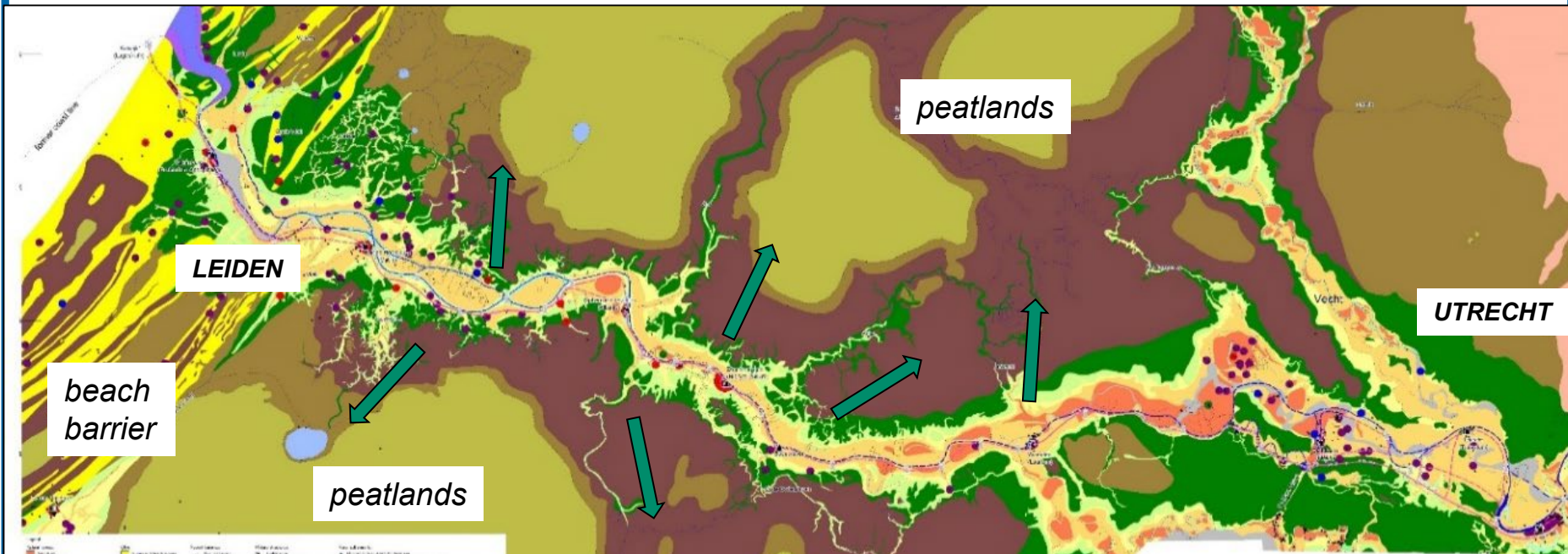
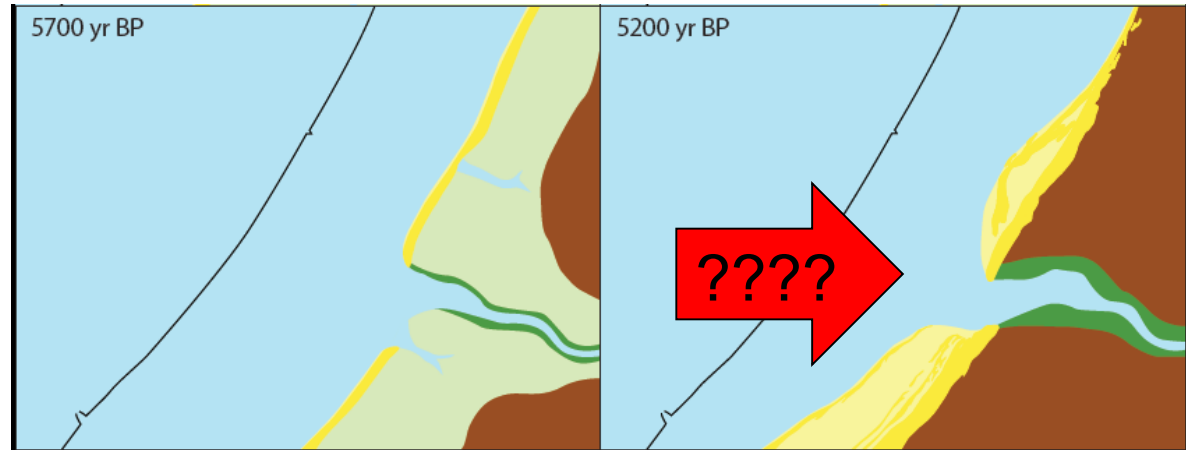
 [@coastal_biker](https://twitter.com/coastal_biker)



L Roelofs; HJ Pierik; M Brückner; B van Maanen
PI: Maarten Kleinhans

Inspirations – The Netherlands

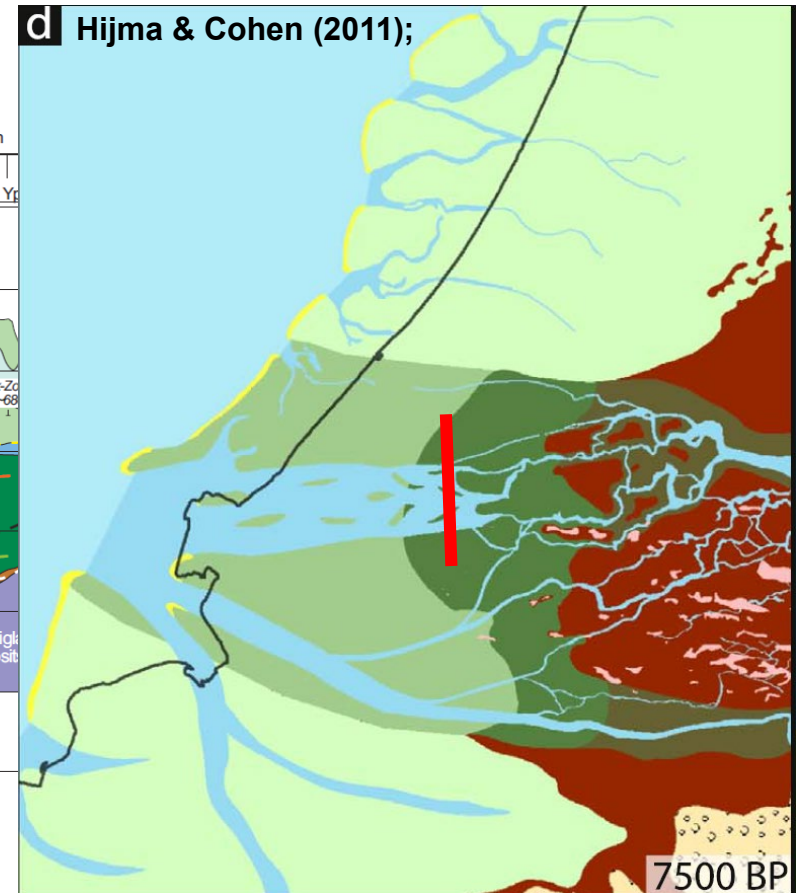
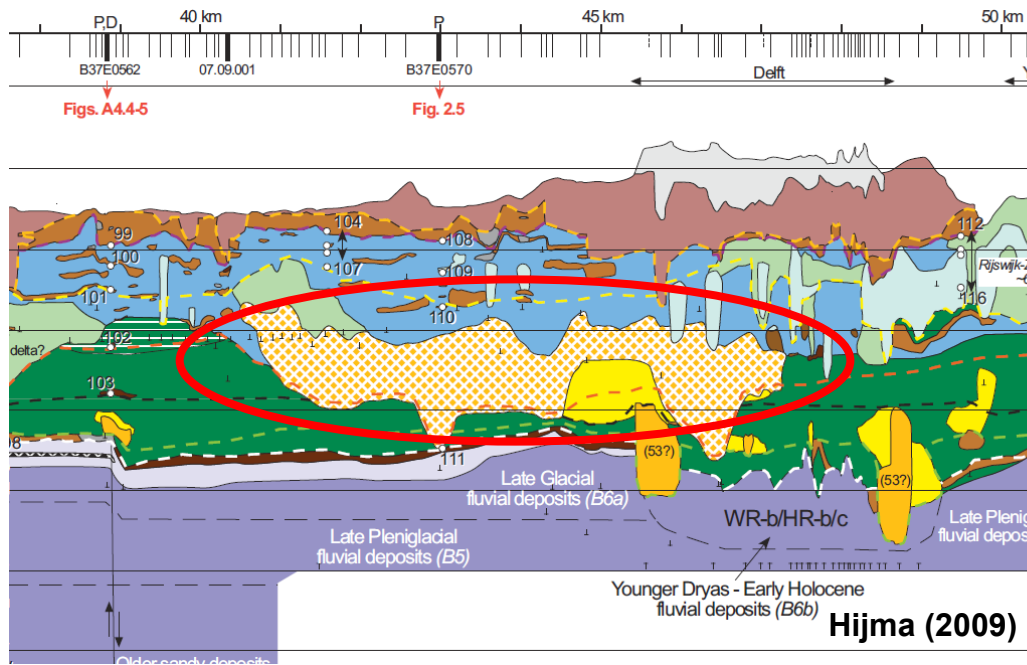
- Fluvial-Tidal
- Levees
- Crevasses
- Vegetation (peat)



Inspirations – The Netherlands

■ Bayhead Delta

■ Fast sea level rise

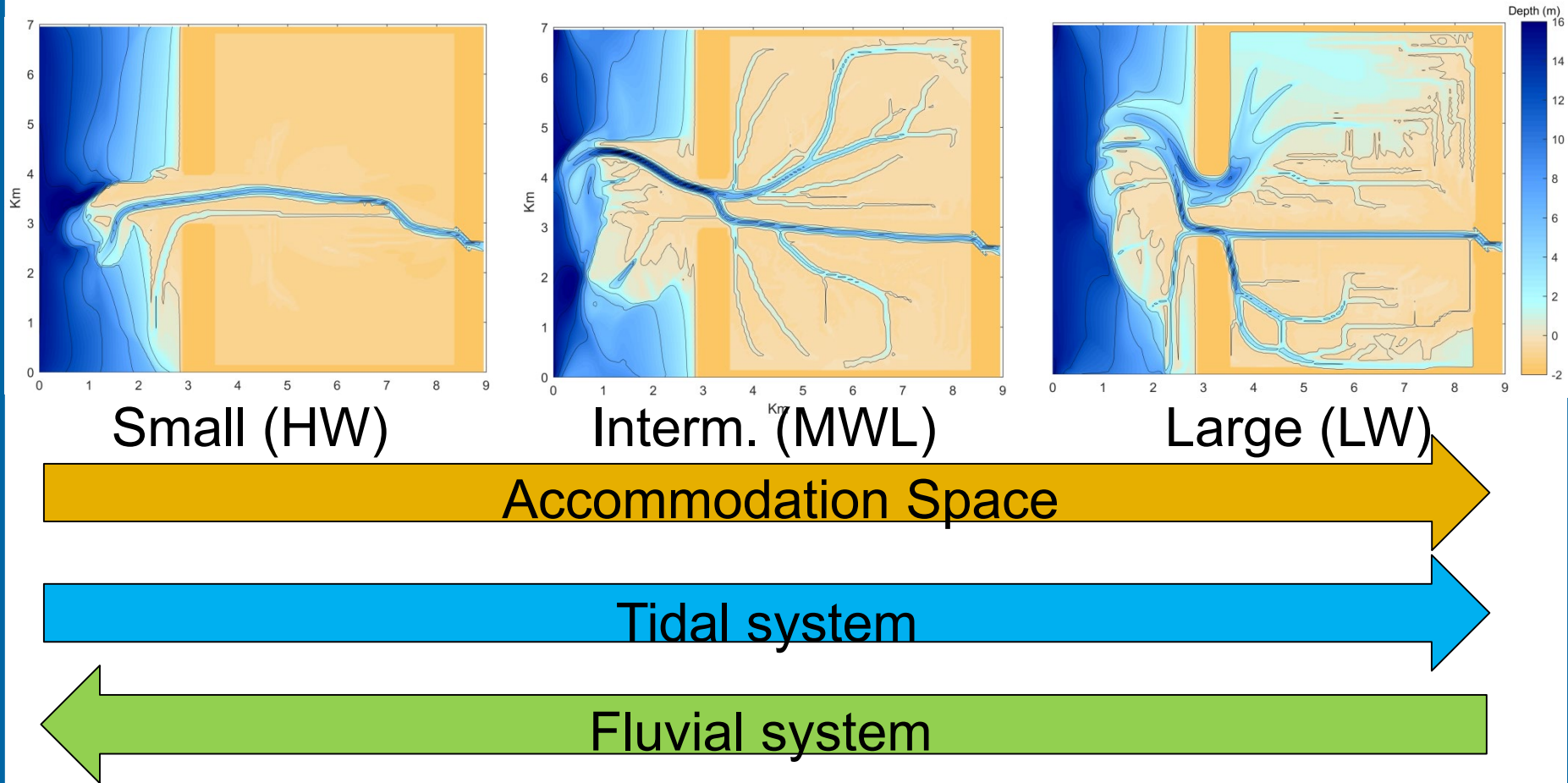


Questions

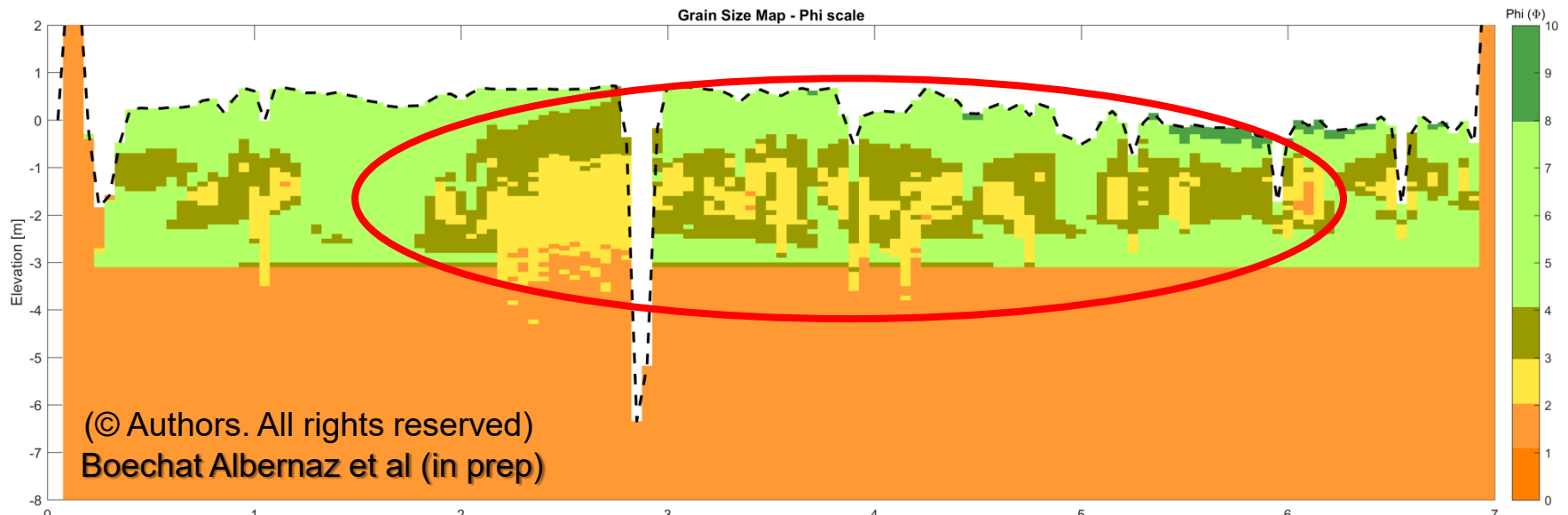
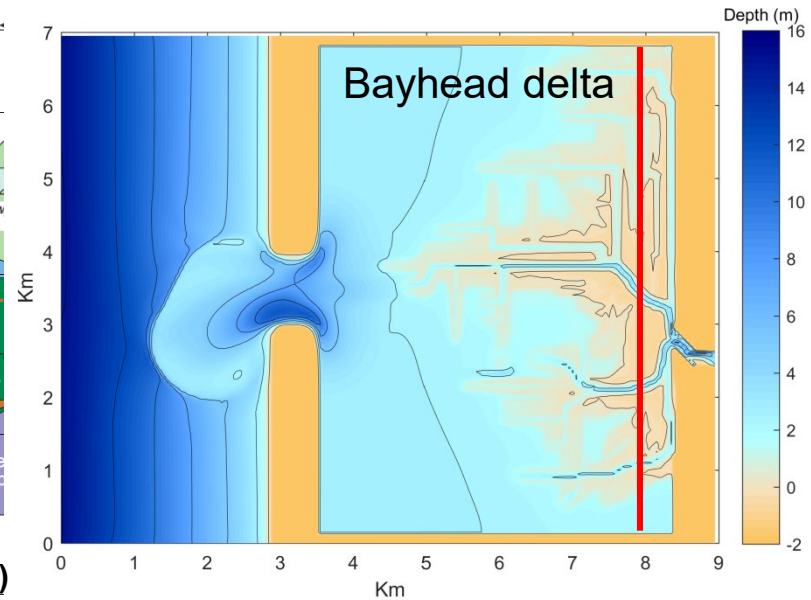
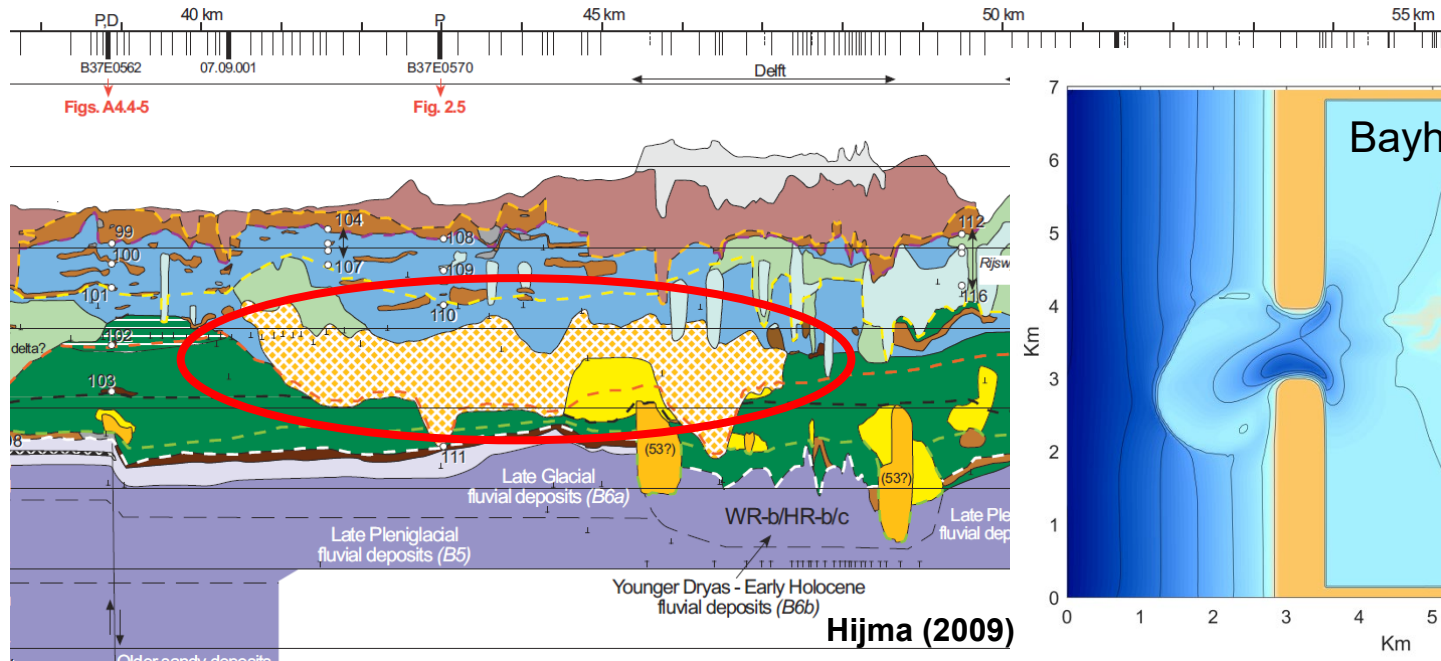
- Accommodation Space (Geological heritage)
 - Controls on the large scale morphology?
 - Bayhead delta (or not)?
- What's the effect of boundary cond. & vegetation
 - Creating levees and crevasses?
 - Geomorphology?
 - Environment end-member?

Geological heritage - Initial condition

■ Accommodation Space – 400 yrs

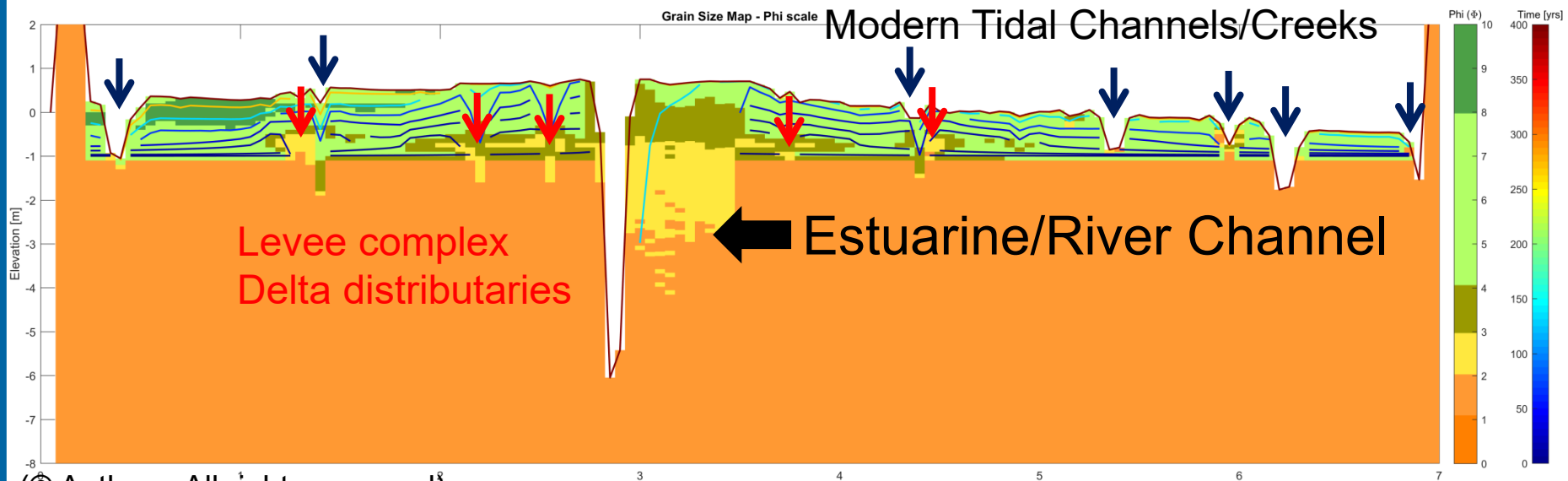
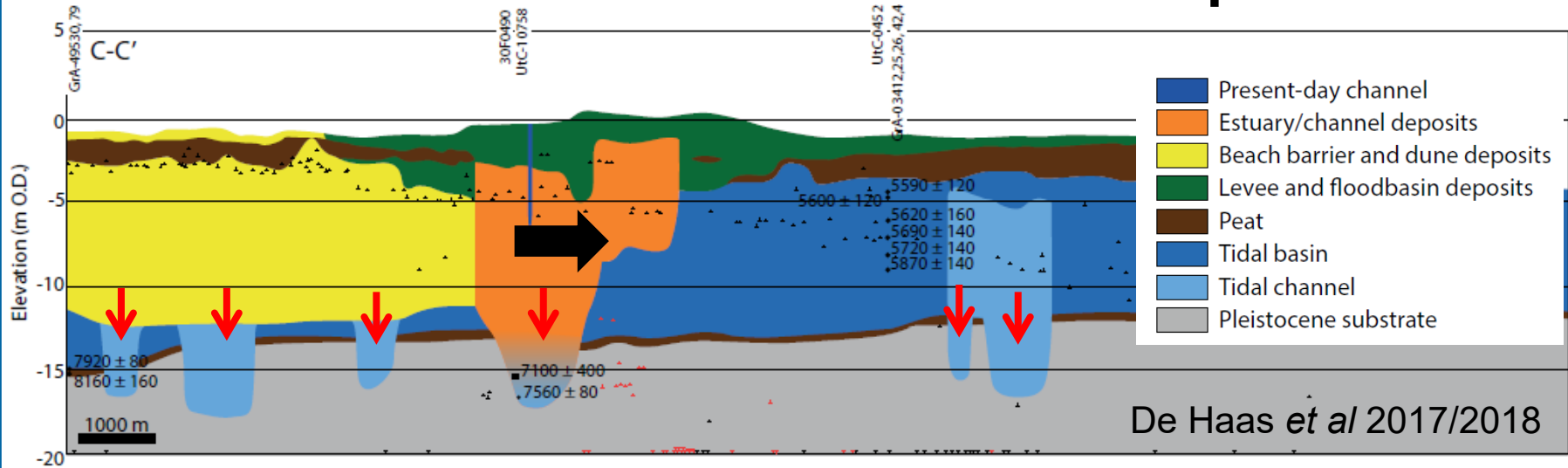


Large Accomodation Space – Bayhead delta



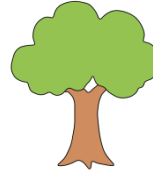
(© Authors. All rights reserved)
Boechat Albernaz et al (in prep)

Interm. Accomodation Space



Tidal-Fluvial Levees & Crevasses

■ Effects of Vegetation



reference

sparse vegetation

dense vegetation

model 40

model 64

model 63

A

C

B

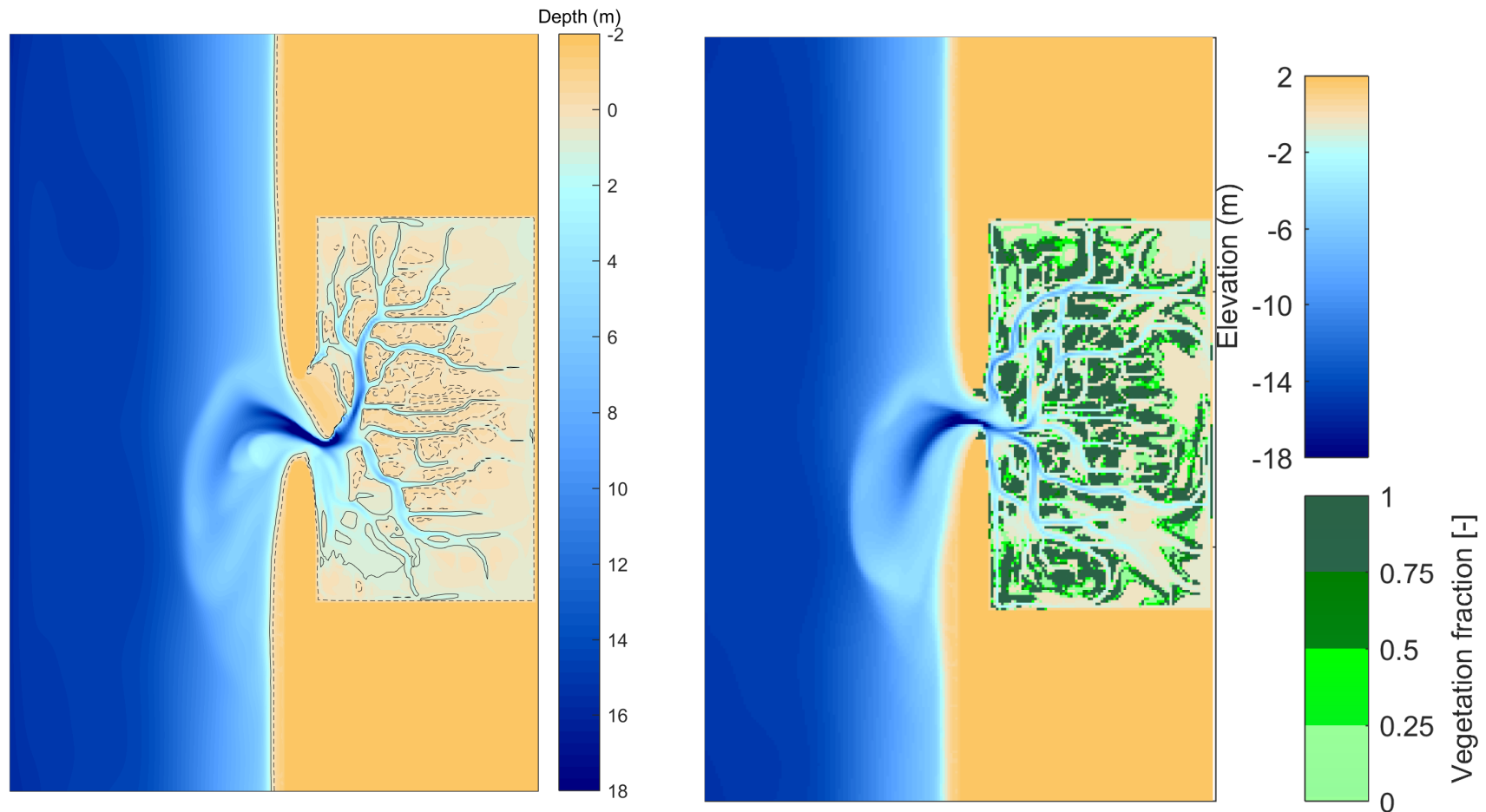
2 Km

Accommodation Space

Tidal system

Fluvial system

Ongoing work: Tidal basin w/ waves and dynamic vegetation



Take Home

- Accommodation Space determines the large scale architecture of deposits
- Vegetation changes the tidal-fluvial balance and affects the (bio)geomorphological evolution of levees/crevasses and floodbasins
- Sediment supply + vegetation are key components to infill the waterscapes vs SLR

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