



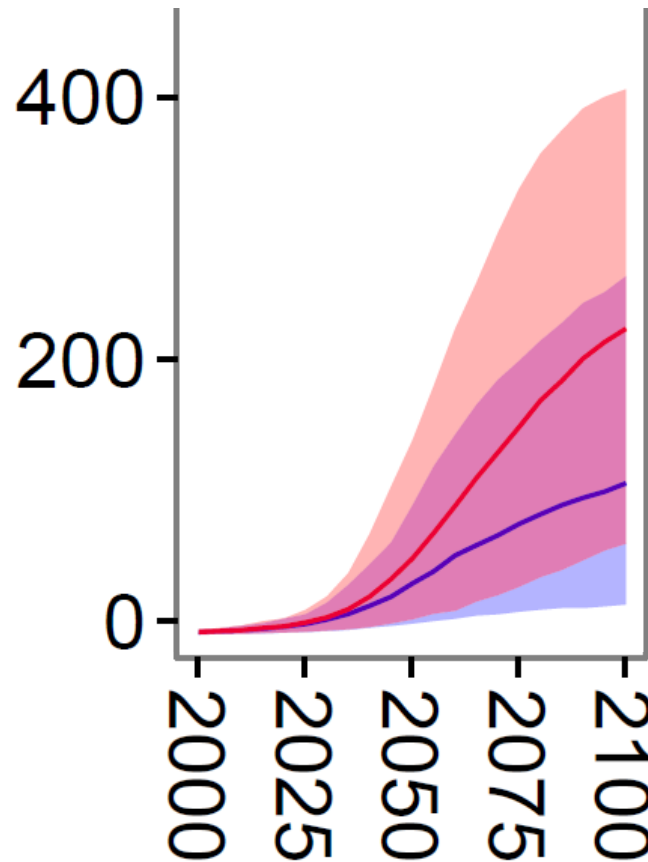
Per kerend tij: het spel van water en zand in rivieren en delta's

Maarten G. Kleinhans

materiaal teruglezen: [google mij](#)

Luctor et submergo?

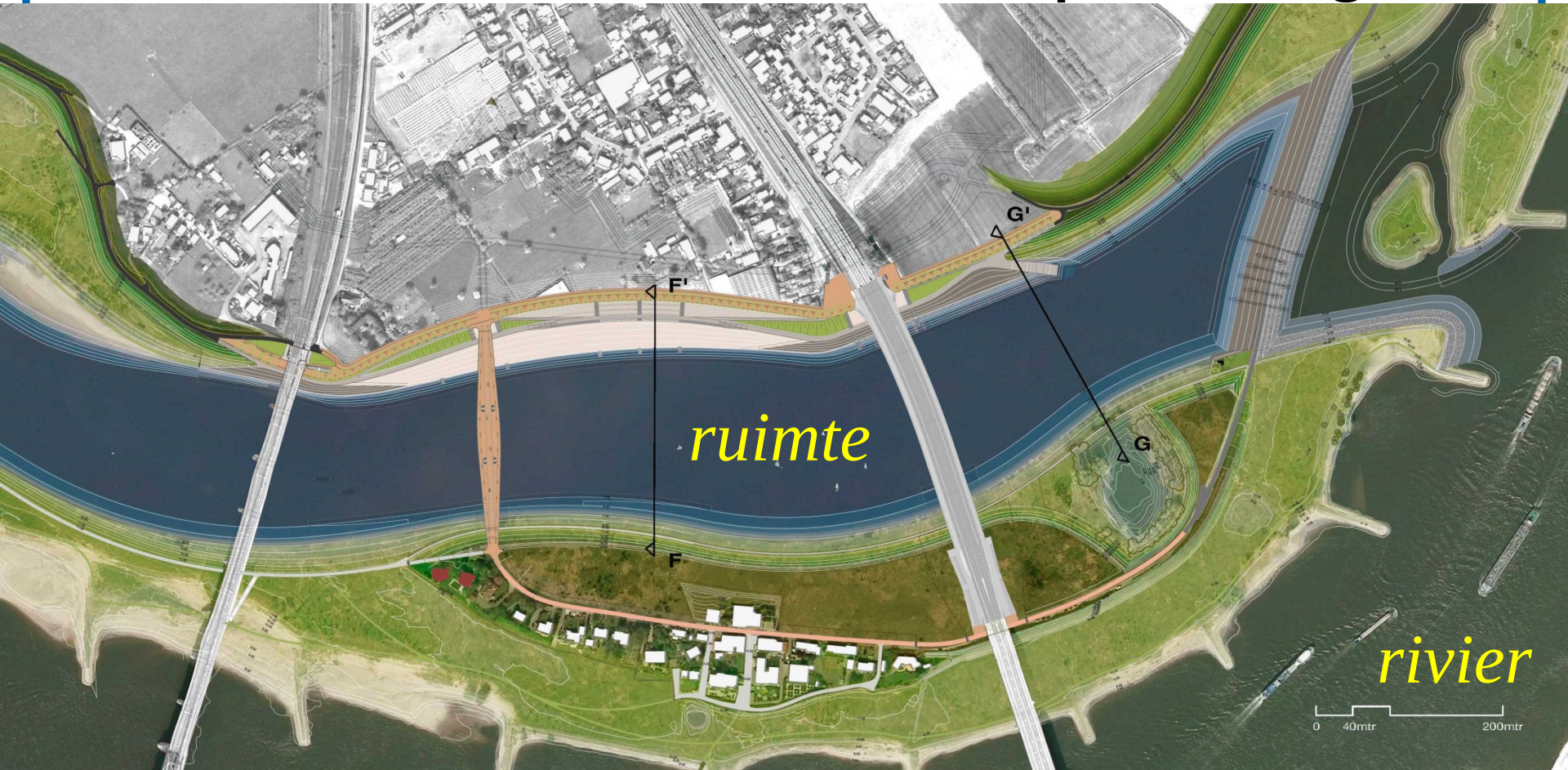
miljoenen mensen
overstroomd

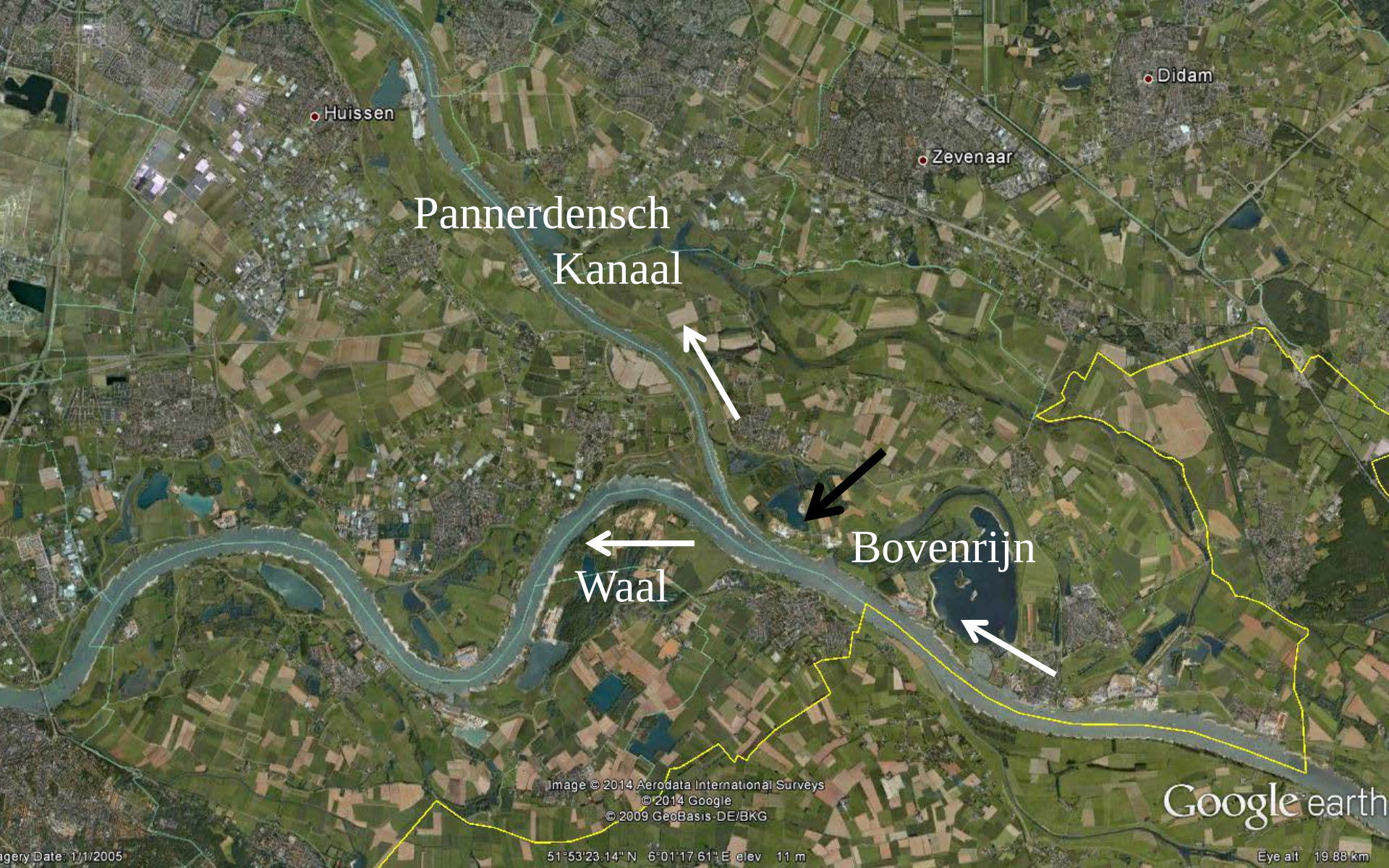


Hinkel et al. 2014

10.1073/pnas.1222469111

Ruimte voor de rivier: oplossing?





Huissen

Didam

Zevenaar

Pannerdensch
Kanaal



Bovenrijn

Waal



Image © 2014 Aerodata International Surveys

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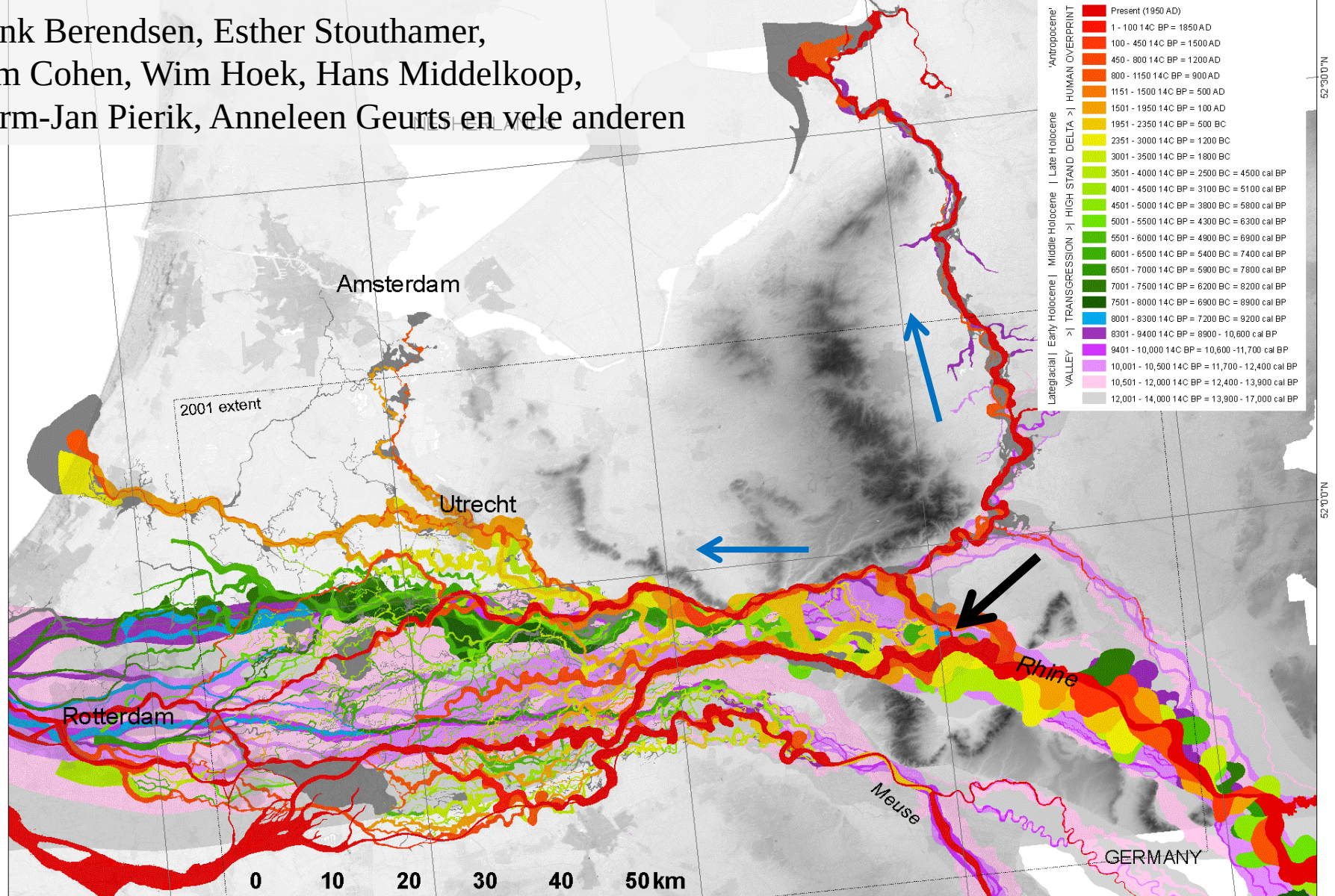
Google earth

Imagery Date: 1/1/2005

51°53'23.14" N 6°01'17.61" E elev 11 m

Eye alt 19.88 km

Henk Berendsen, Esther Stouthamer,
Kim Cohen, Wim Hoek, Hans Middelkoop,
Harm-Jan Pierik, Anneleen Geurts en vele anderen





Ennoia

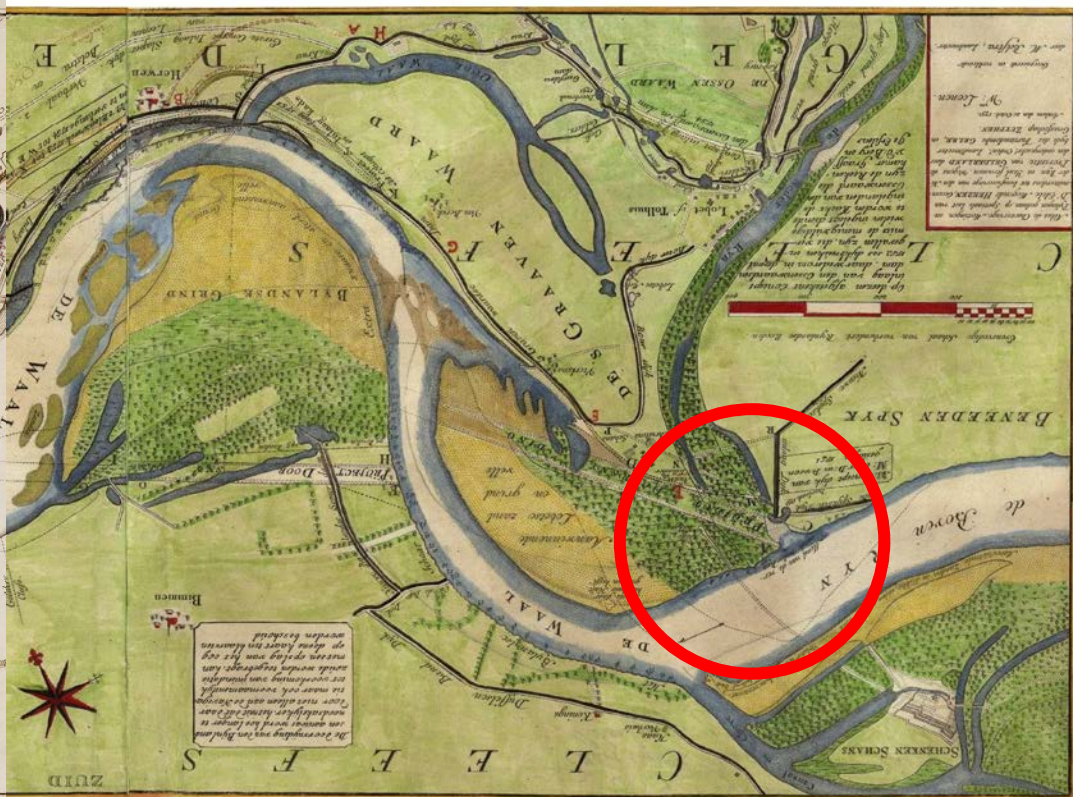
Bovenrijn

Waal

ADVERTISSEMENT

Den 20ten Junij 1780 maaden een Wytv

1751 AD



Waarom?

- Toen: water!
- Nu: niet water,
maar
zandverdeling op de splitsing
ten opzichte van water



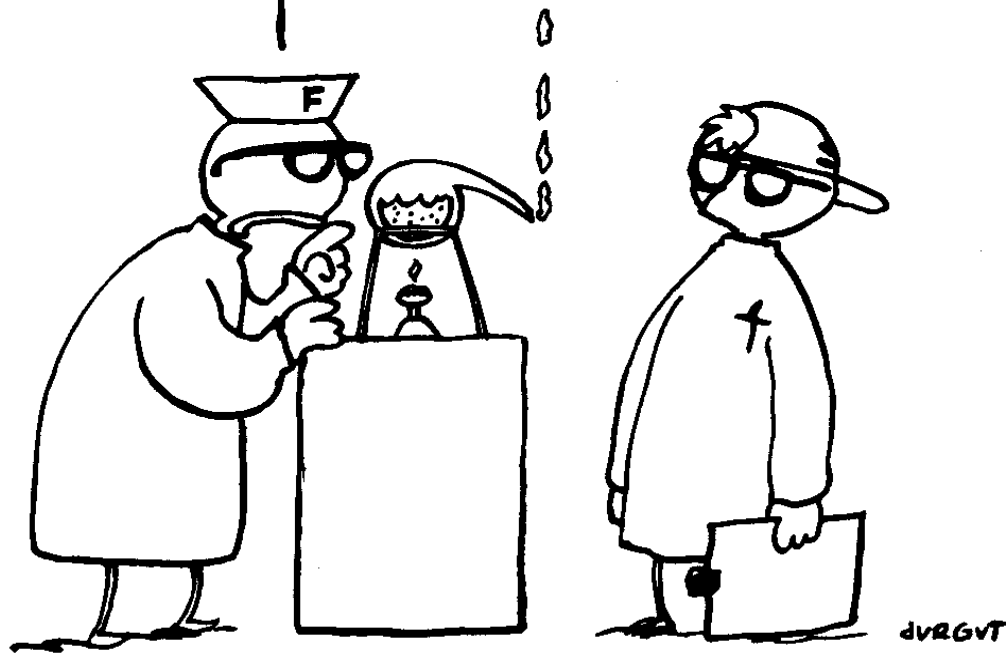
Christiaan Huygens
1629-1695

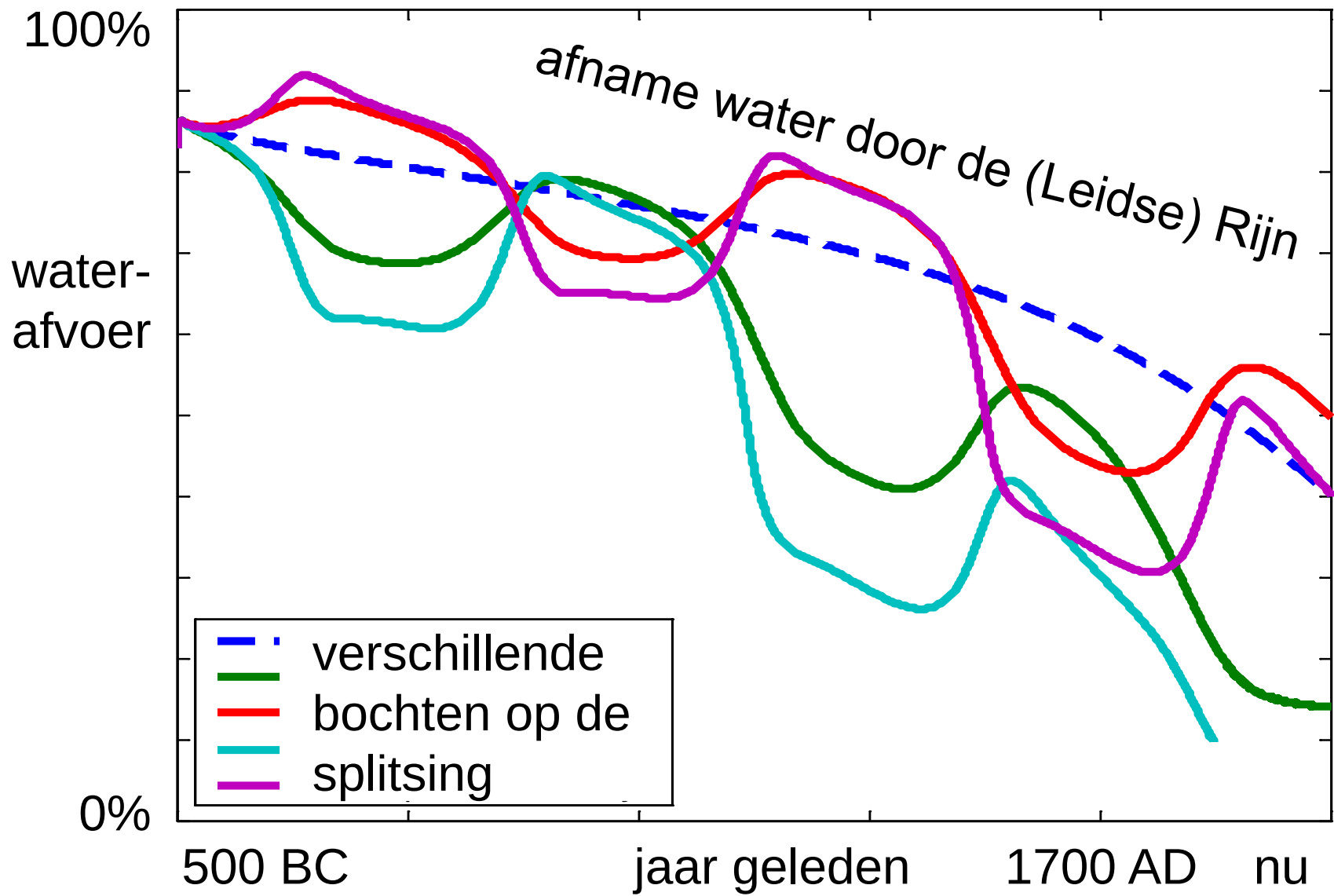
FOKKE & SUKKE

WETEN WAAR HET IN DE WETENSCHAP
OM DRAAIT

...ZEER INDRUKWEKKEND, COLLEGA...

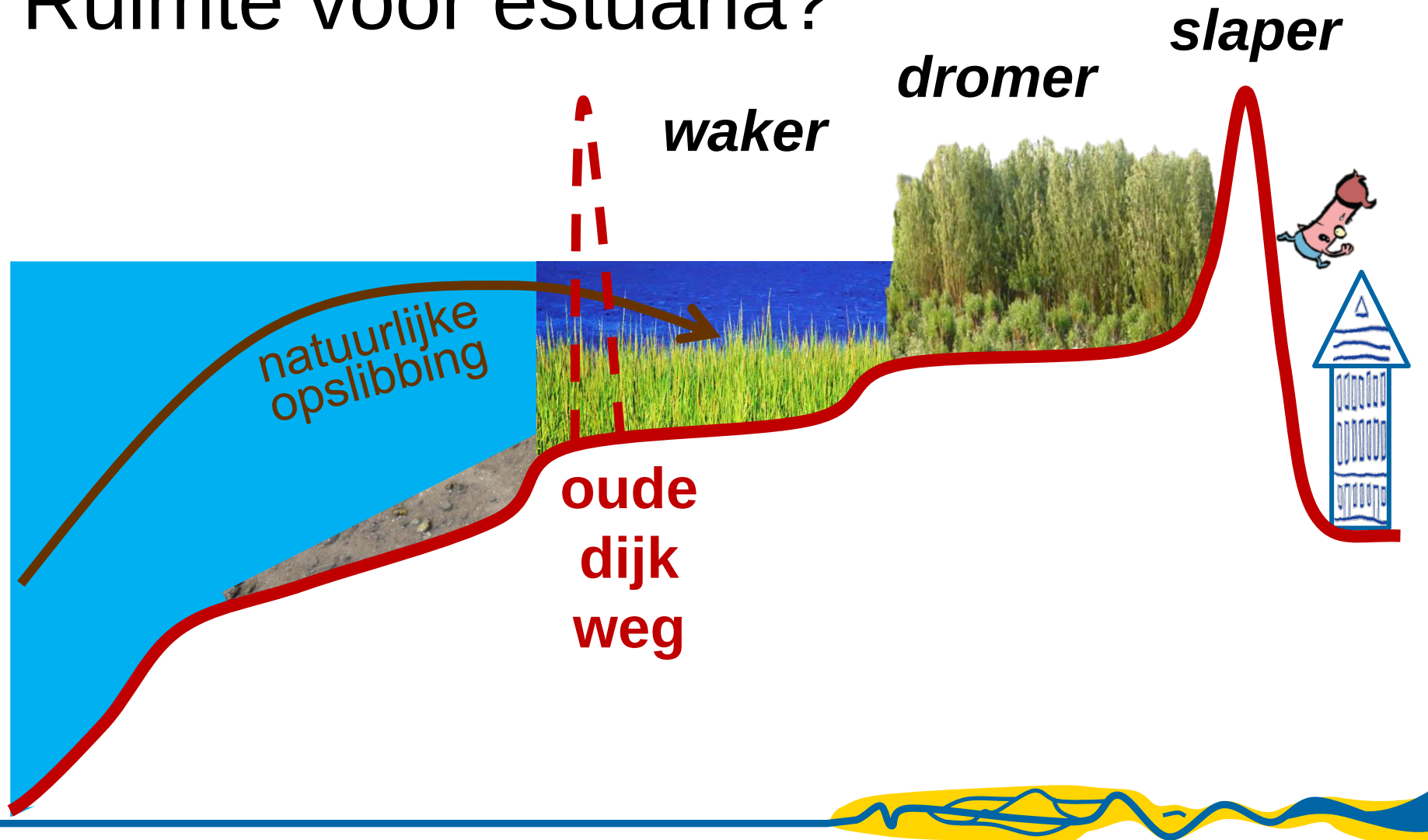
MAAR WERKT
HET OOK IN
THEORIE?







Ruimte voor estuaria?

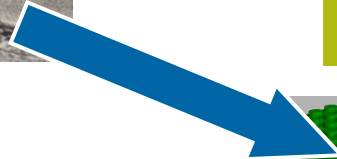


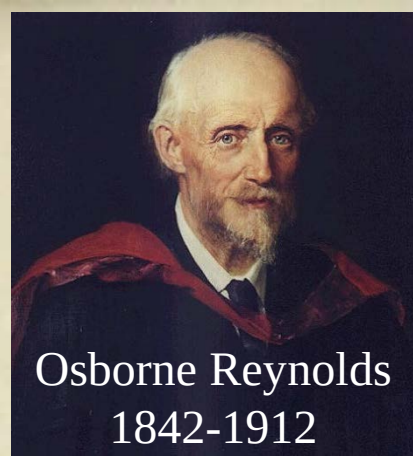
• 14 april 2012, 20:19

Bommetje PVV onder 'definitieve plannen' Bleker met Hedwigepolder



Trekken aan de staart van een leeuw

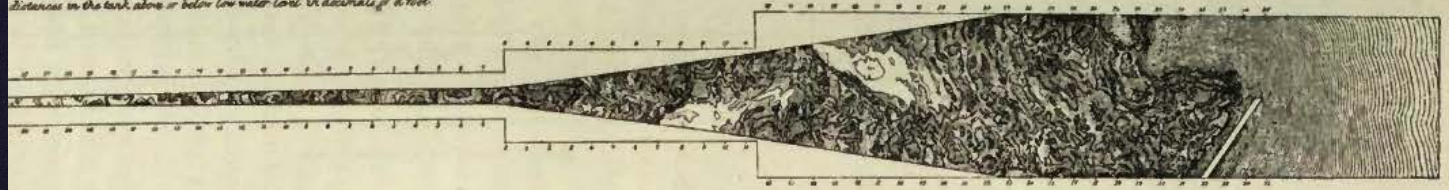




Osborne Reynolds
1842-1912

WITH LAND WATER.
Tank E. Experiment VII. Plan II. After 101750 tides at 3634 Sec.

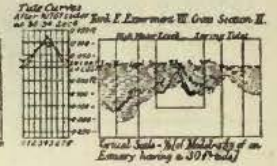
Distances in the tank above or below low water level in decimals of a foot.



Tank E. Experiment VII Longitudinal Section II.
High Water Level - Spring Tides.

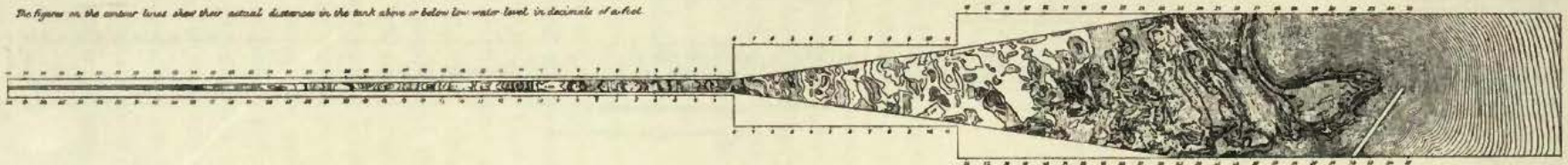


Horizontal Scale - 1/4 of Model - 1/1500 of an Estuary having a 30 Feet tide.



WITH LAND WATER.
Tank F. Experiment VI. Plan I. After 100772 tides at 2431 Sec.

The figures on the contour lines show their actual distances in the tank above or below low water level in decimals of a foot.



Tank F. Experiment VI Longitudinal Section I.
High Water Level.



Horizontal Scale - 1/4 of Model - 1/1500 of an Estuary having a 30 Feet tide.

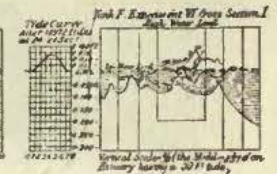


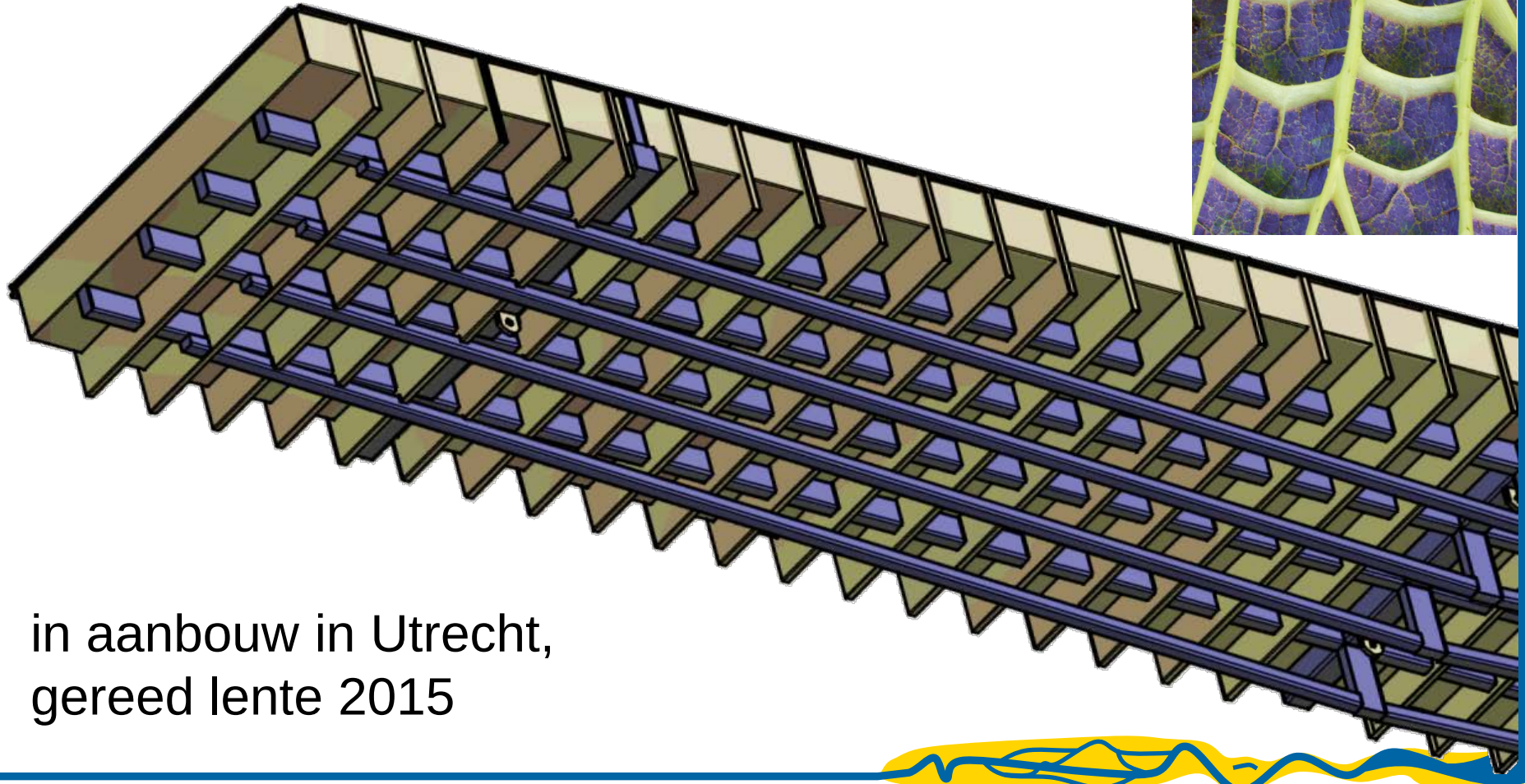
Fig. 14.

experimentele estuaria

Niet op en neer, maar kantelen



De Metronoom: nieuwe getijmachine



in aanbouw in Utrecht,
gereed lente 2015

Verleggen!

- zelf experimenteren
- rivieren verleggen zich doorlopend!
- www.wetenschapsknooppunten.nl



Aan de einder

