

Mudflat dynamics under SLR

- 1) Can we reproduce a realistic, measured mudflat profile?
- 2) What are governing factors and conditions for equilibrium?
- 3) What is the impact of sea level rise?

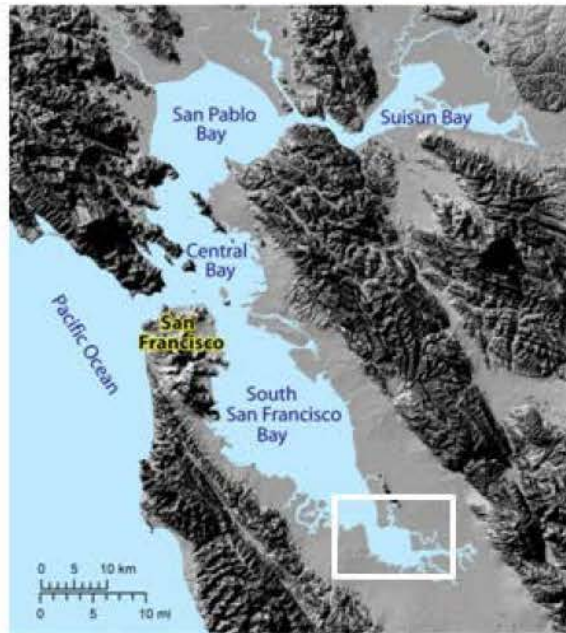
Mick van der Wegen (Deltares, UNESCO-IHE)

Co-workers:

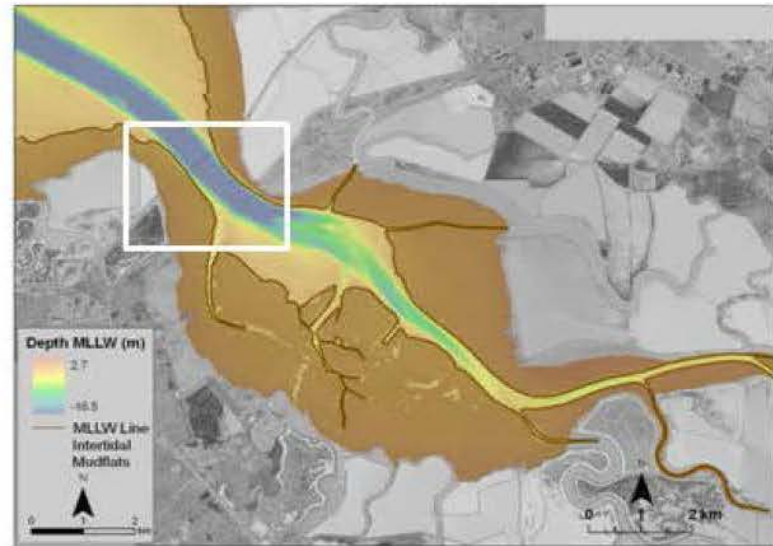
Bruce Jaffe, Amy Foxgrover (USGS), Dano

Roelvink (TU Delft, Deltares, UNESCO-IHE)

(a)



(b)

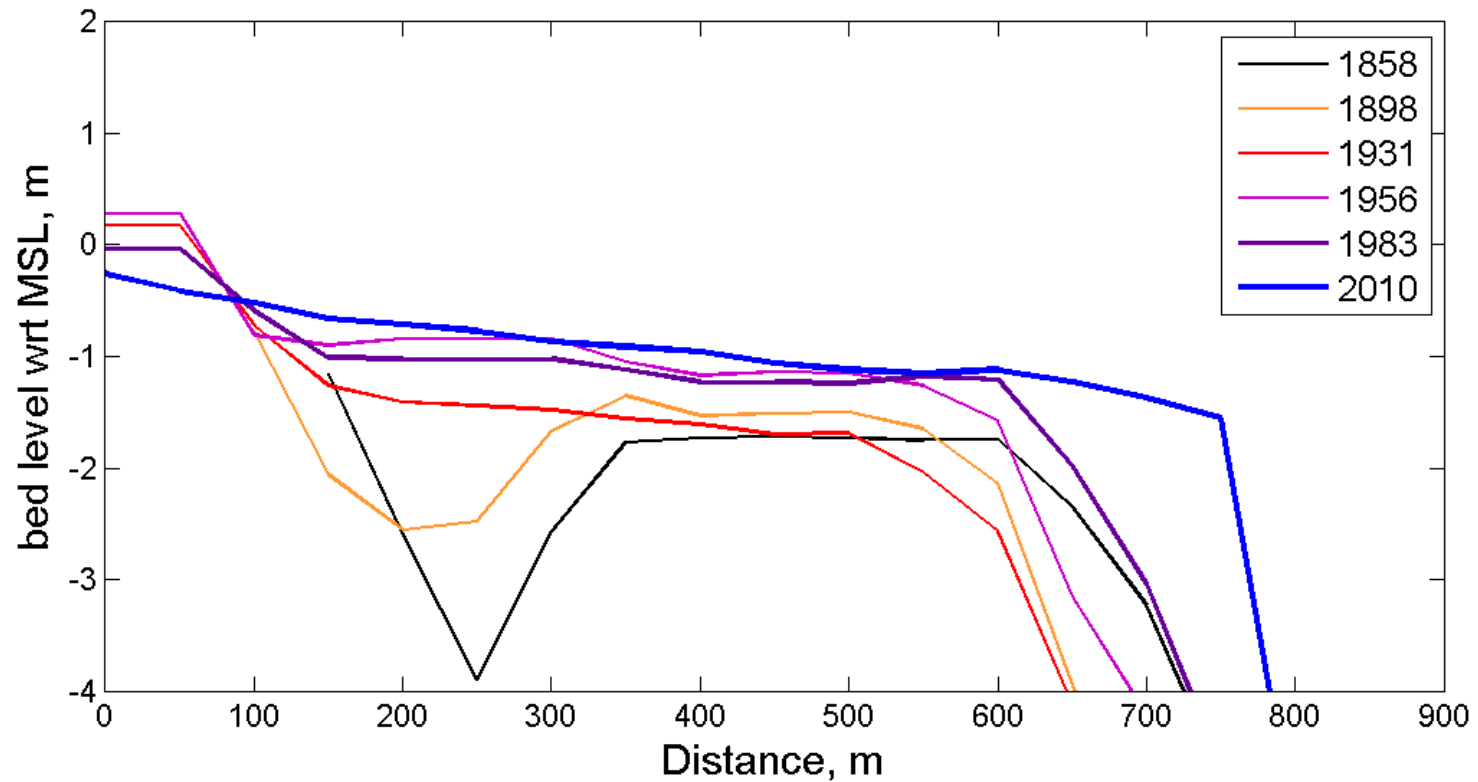


(d)

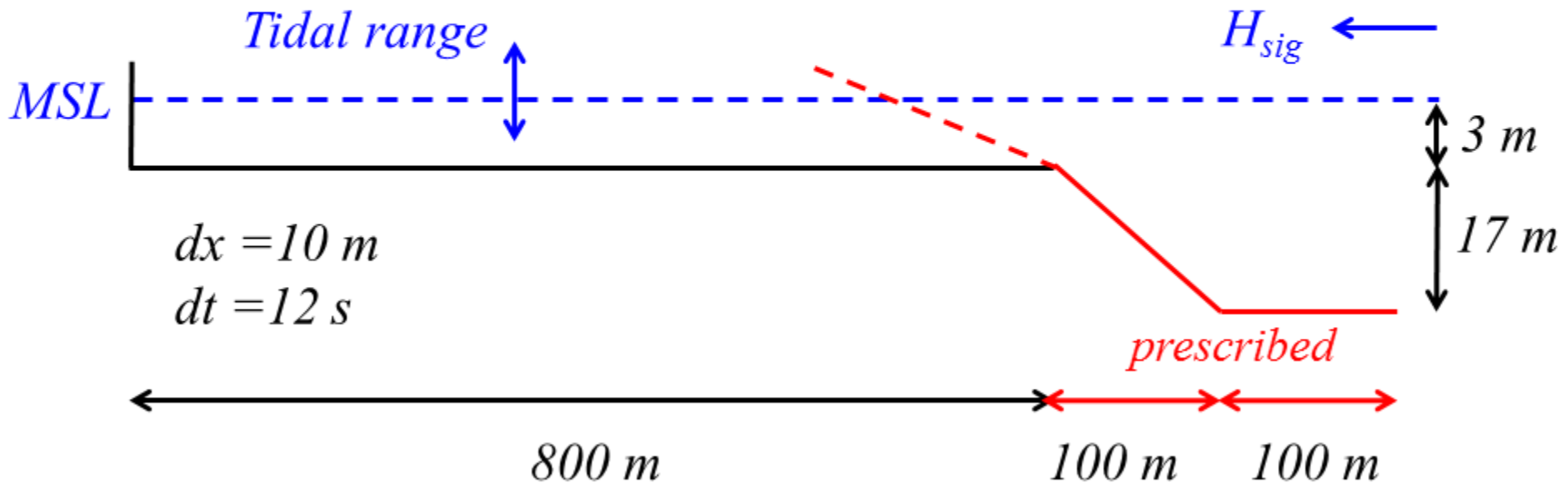
(c)

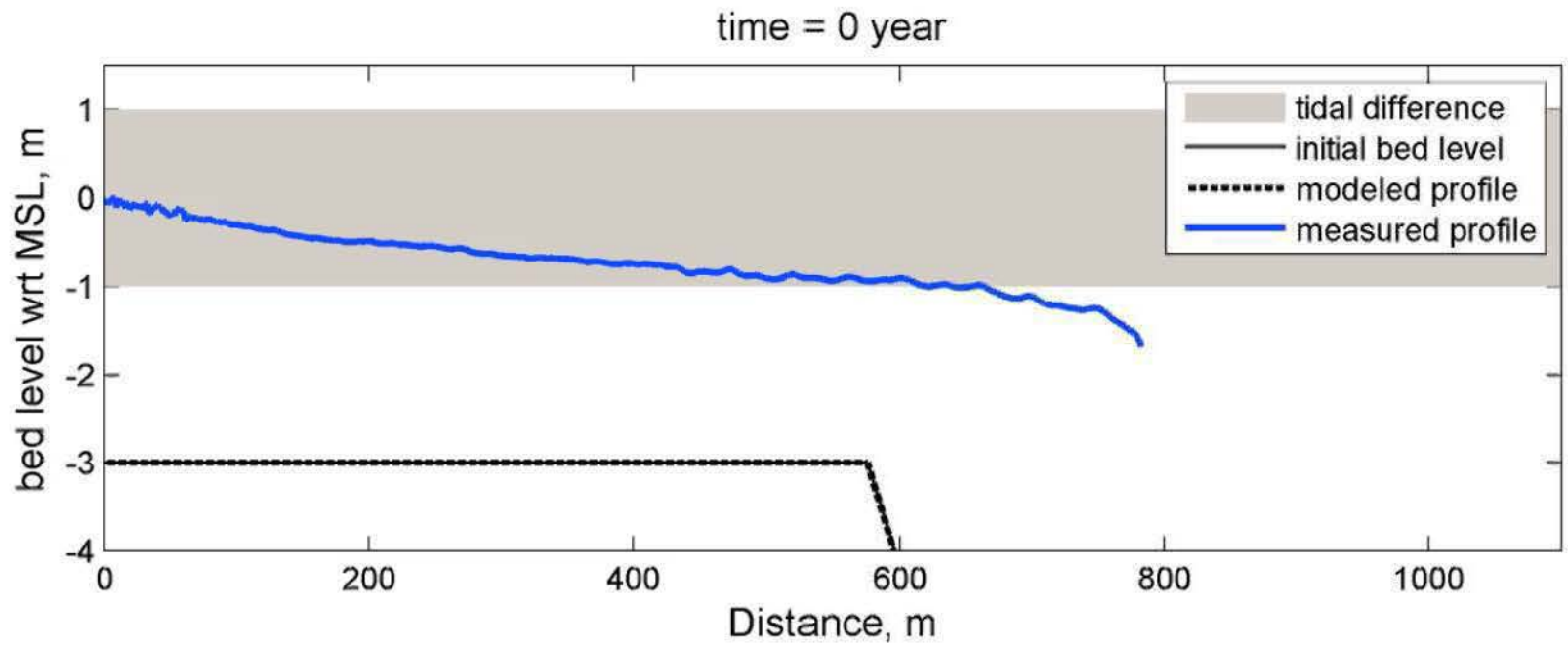


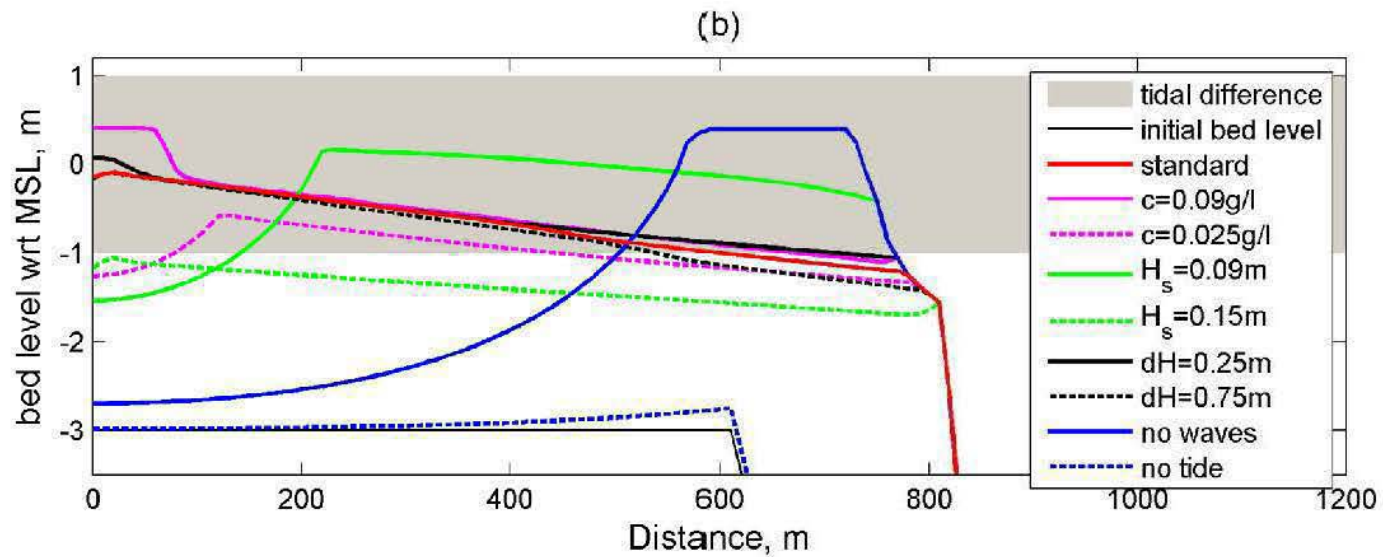
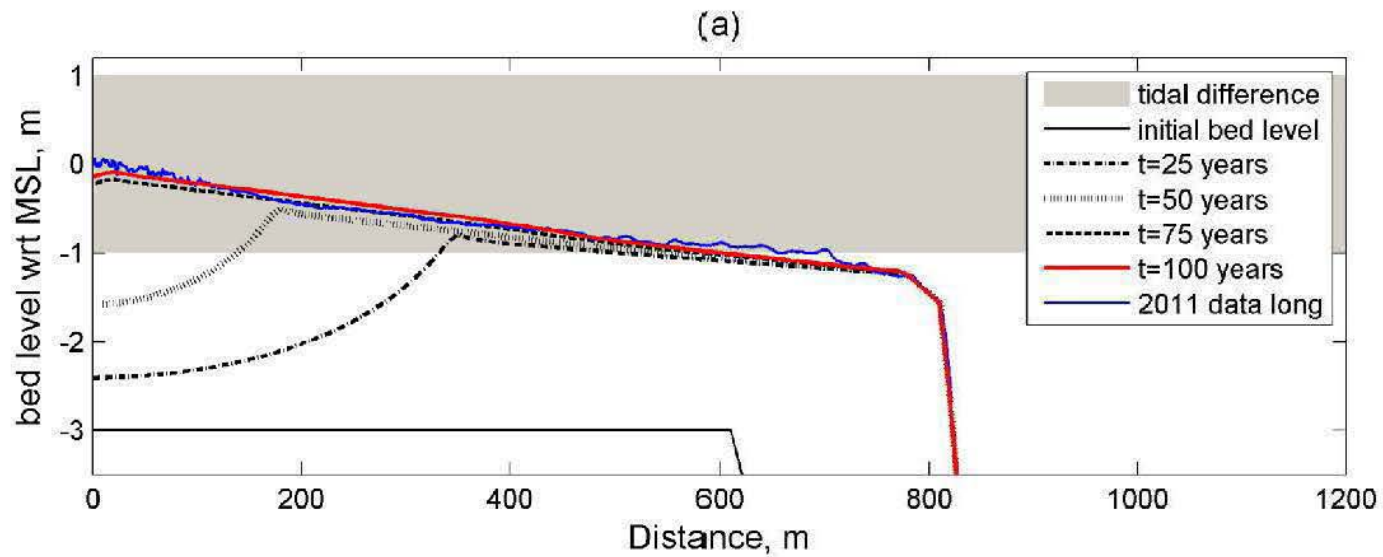
Historic developments



Model schematization

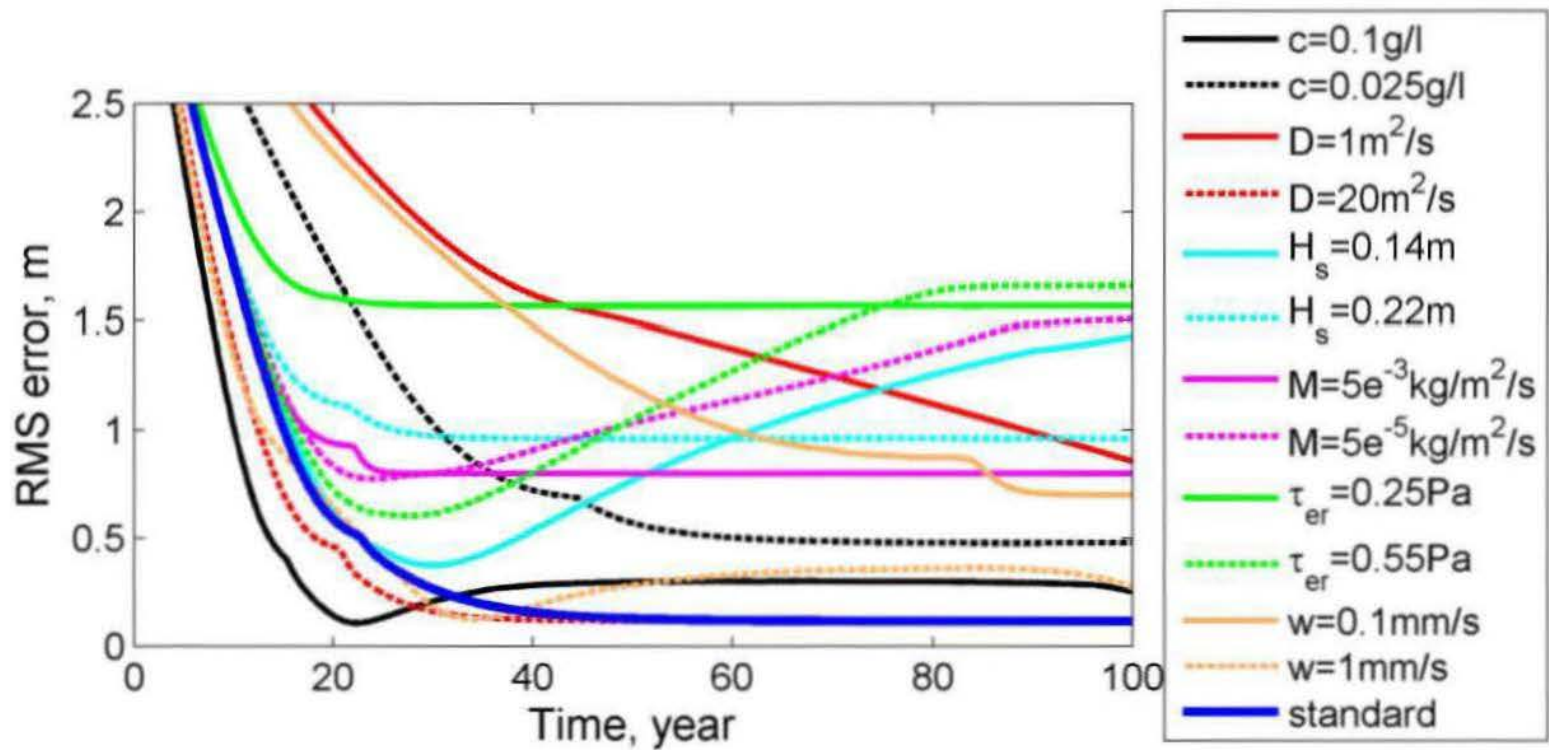






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- 1) Can we reproduce a realistic, measured profile?
 - *Yes, even when applying constant forcing conditions with a low representative H_{sig}*
- 2) What are the governing factors and conditions for equilibrium?
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Waterdepth

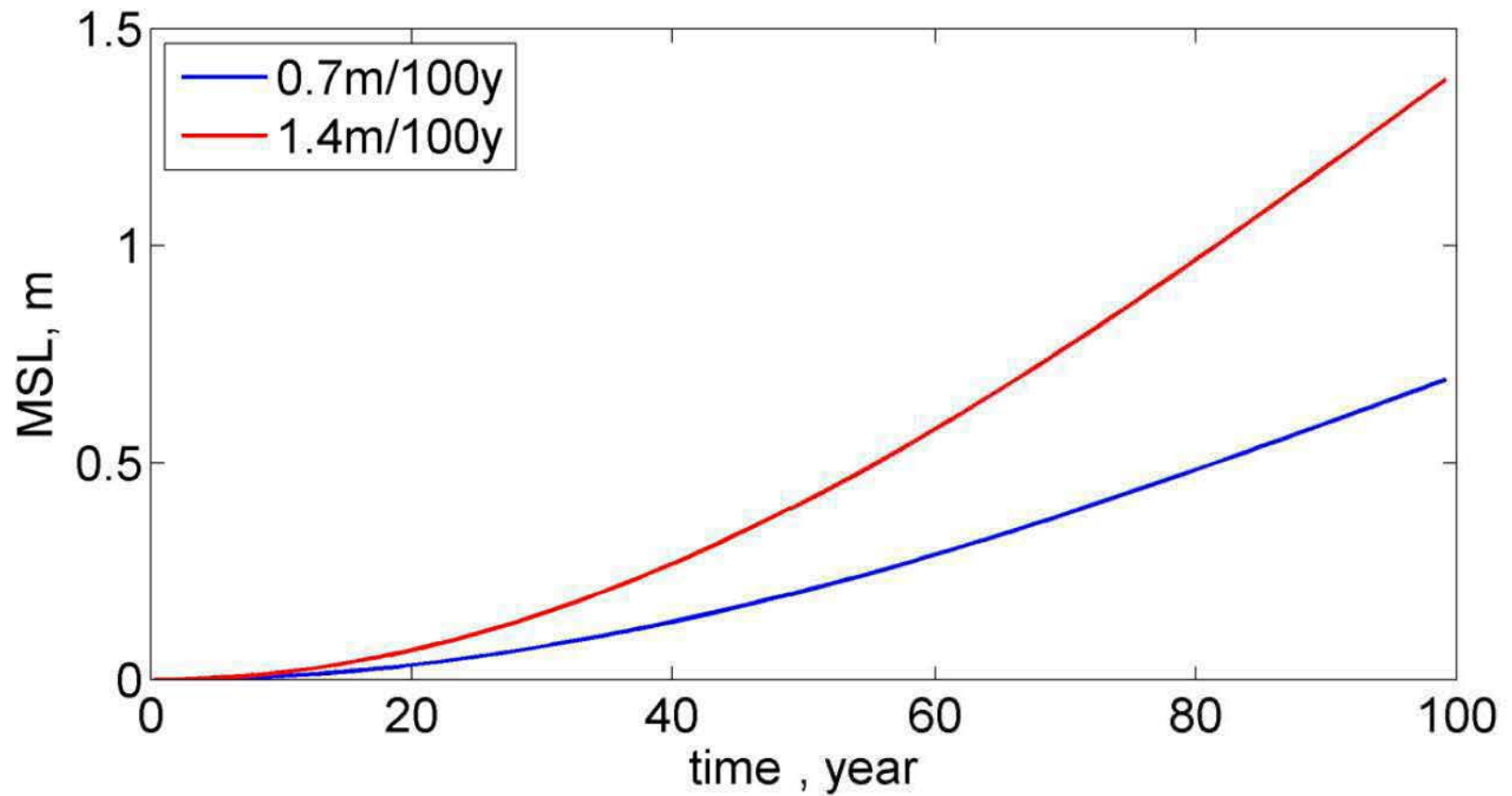
H_{sig}
SSC

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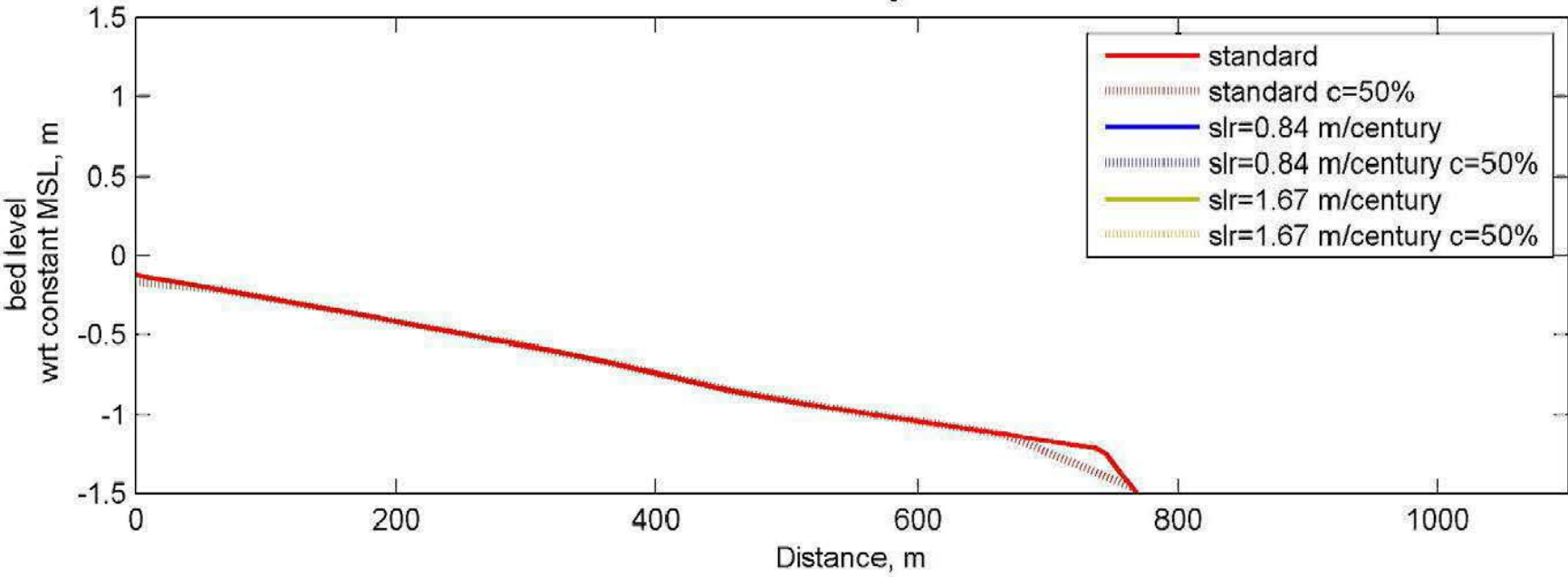
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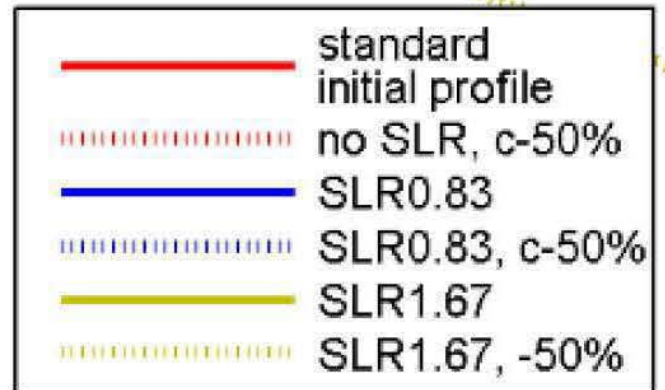
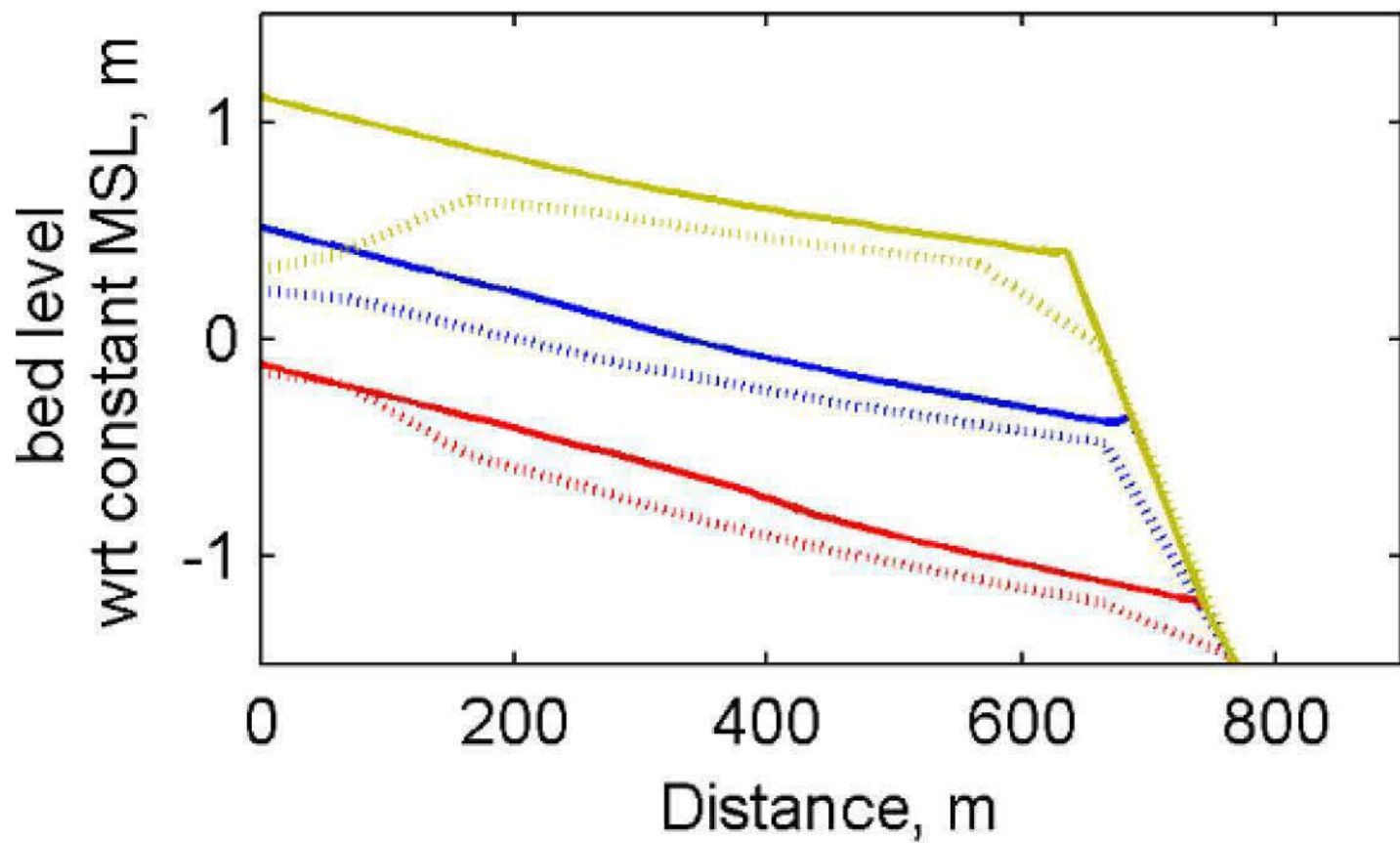
- 2) What are the governing factors and conditions for equilibrium?
 - *Sensitivity analysis shows governing factors*
 - *Equilibrium allows for high SSC levels*

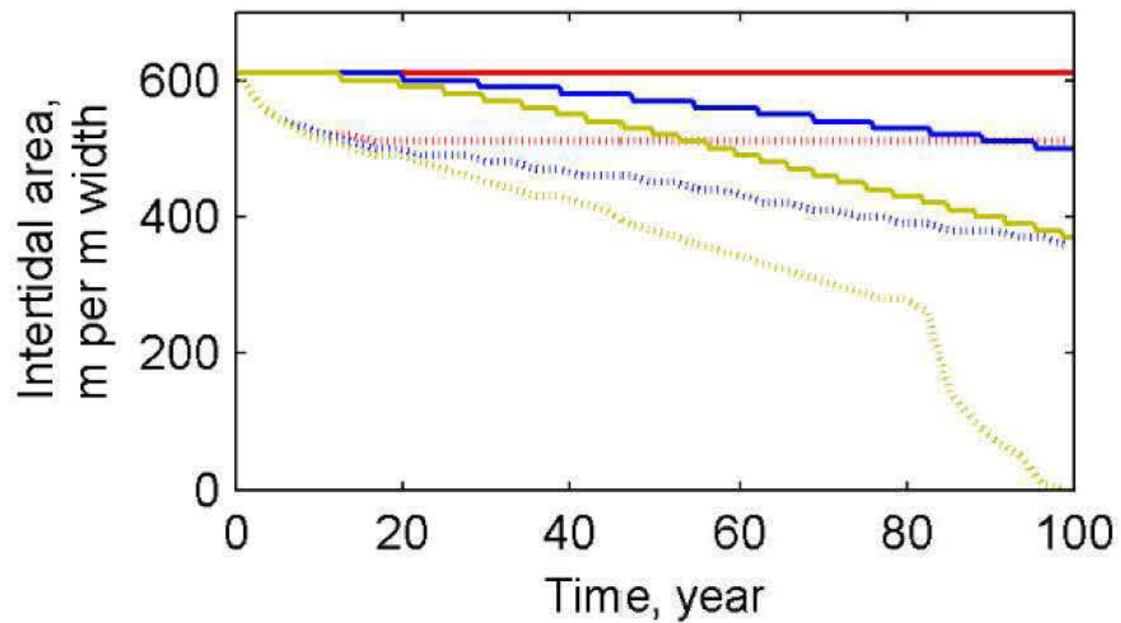
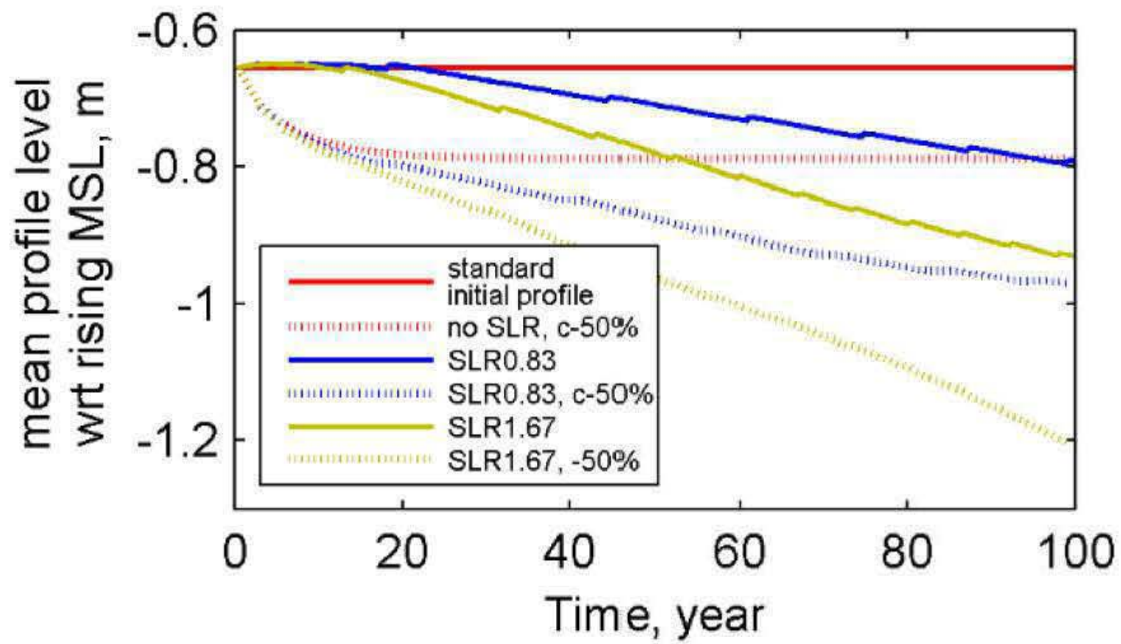
- 3) What is the impact of sea level rise?



time = 0 year







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- 1) Can we reproduce a realistic, measured profile?
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- 2) What are the governing factors and conditions for equilibrium?
 - *Sensitivity analysis shows governing factors*
 - *Equilibrium allows for high SSC levels*

- 3) What is the impact of sea level rise?
 - *SLR drowns mudflat*
 - *Adaptation timescale of sudden drop in SSC levels is shorter than sea level rise adaptation*