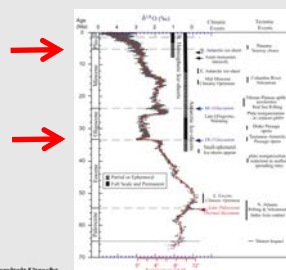


IJskappen, Zeespiegel en Klimaatverandering op lange en korte Tijdschalen

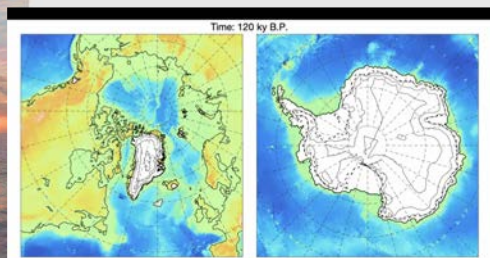
Prof. R.S.W. van de Wal
Institute for Marine and Atmospheric research Utrecht
Department of Physical Geography
Utrecht University
Leiden November 2019

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Gradual? past transitions

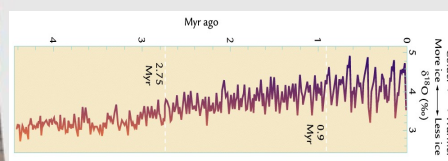


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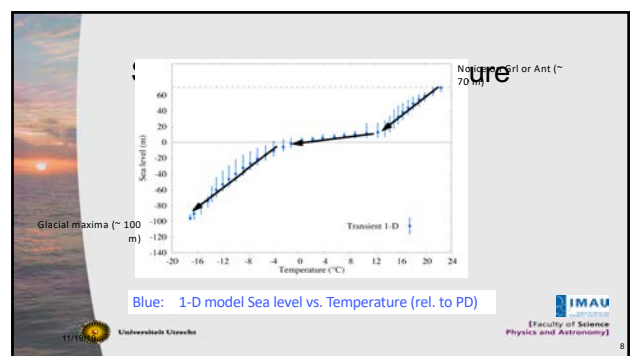
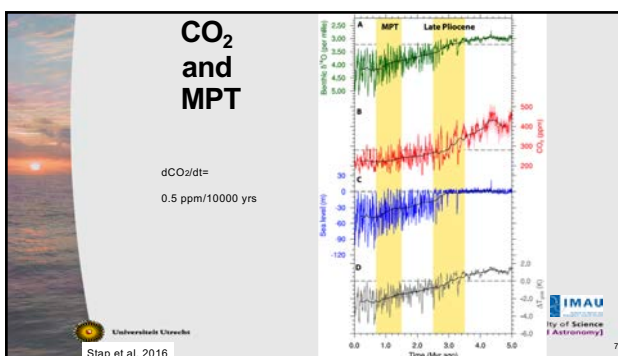
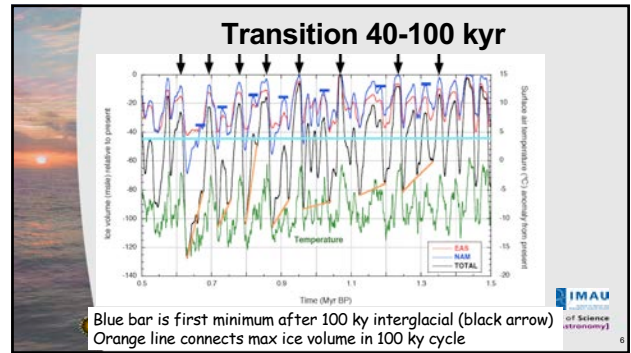
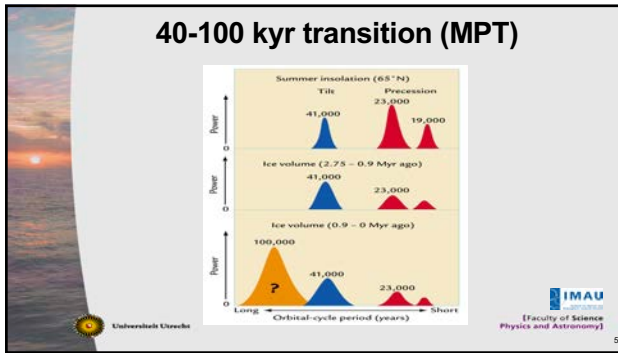
Milankovitch phasing

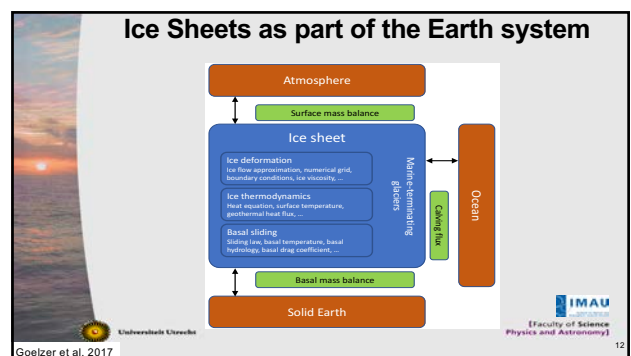
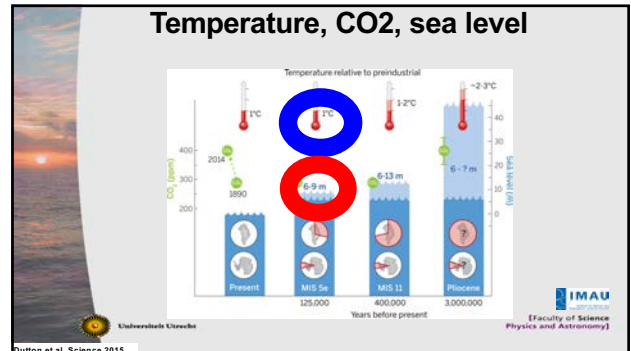
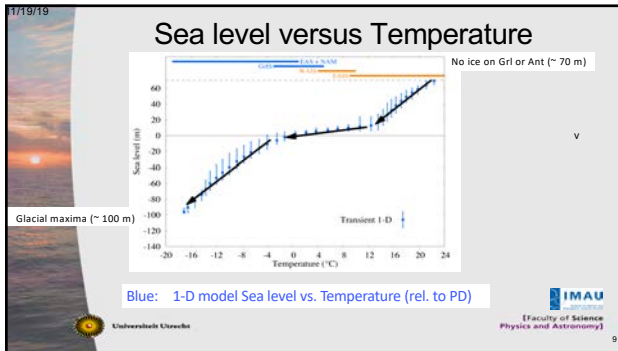


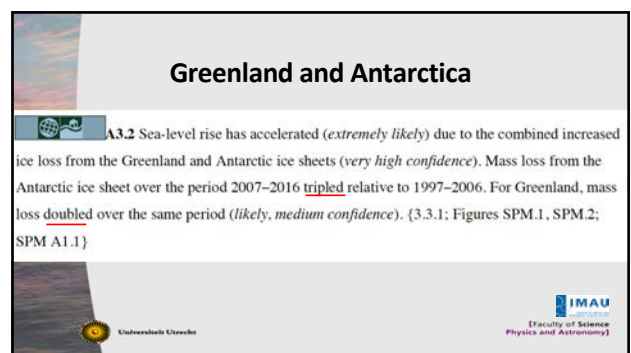
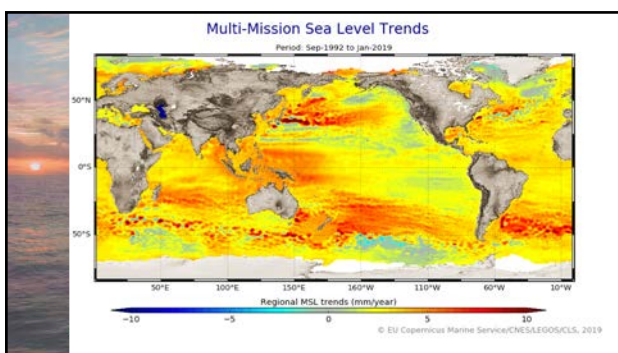
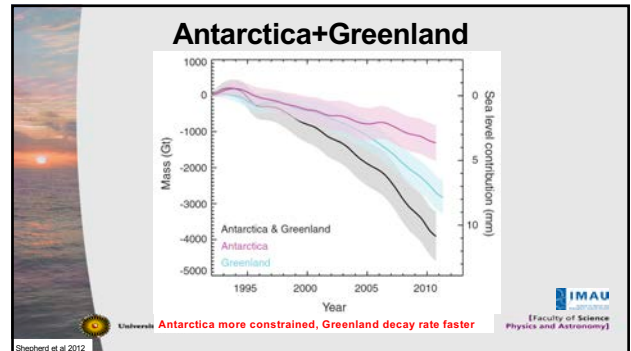
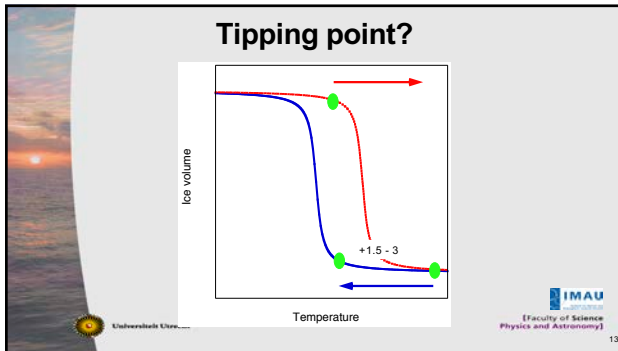
Switch: internal mechanism or external driven?

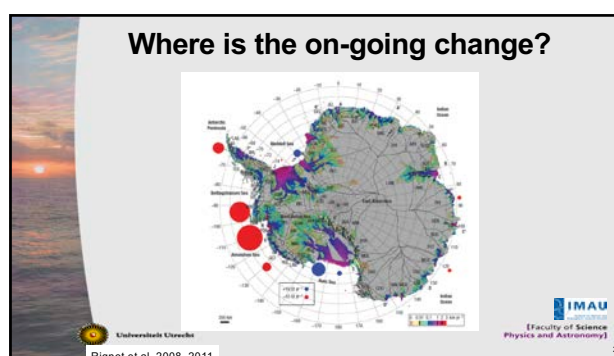
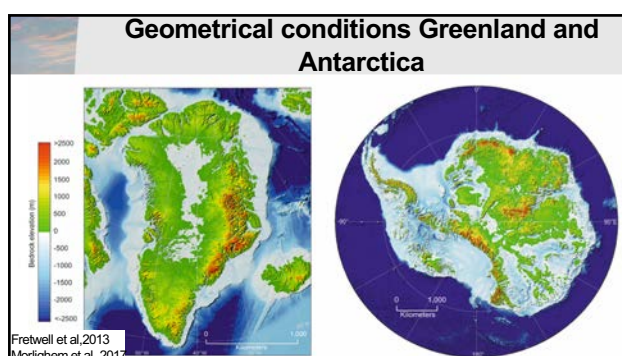
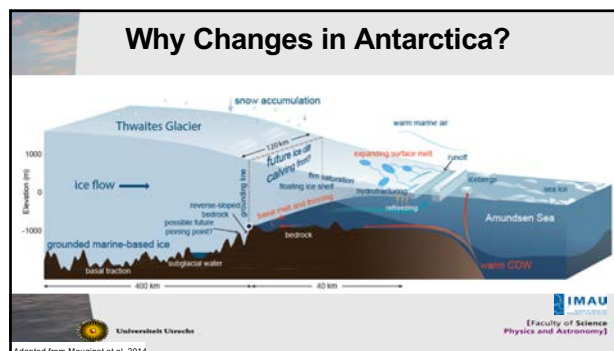
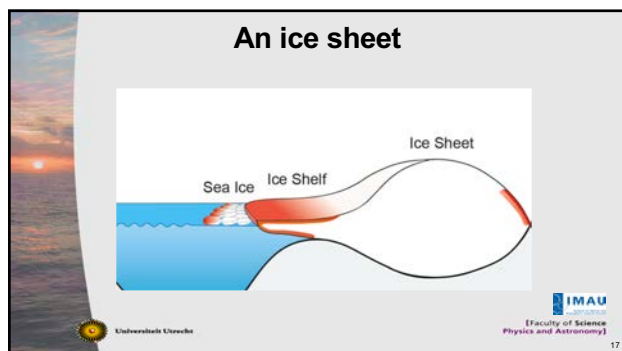
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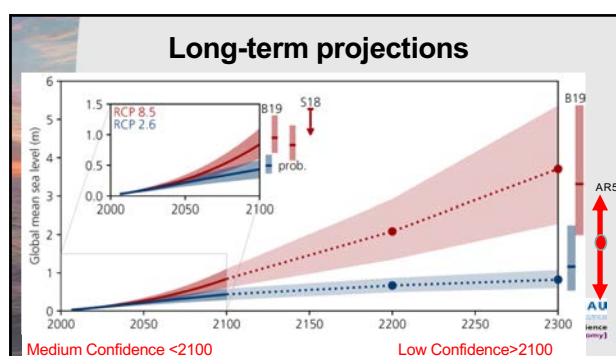
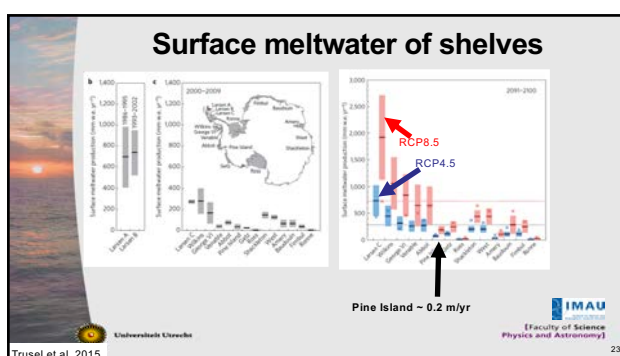
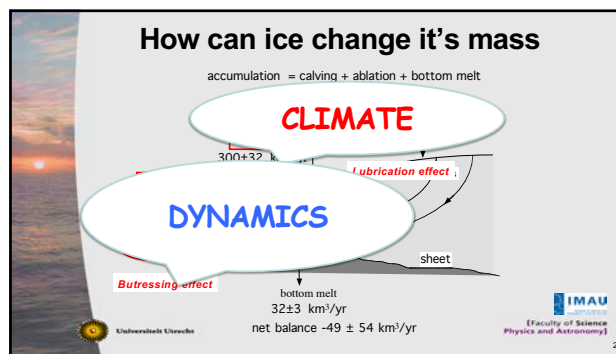
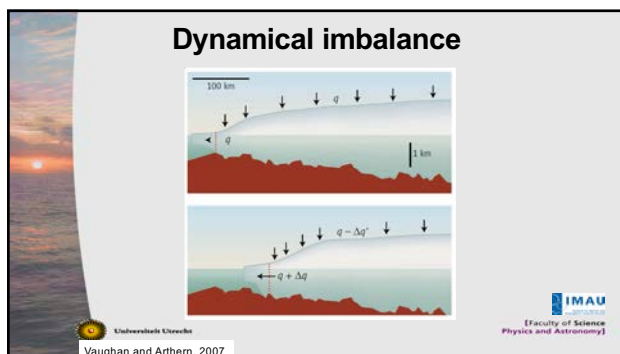
(Ruddiman, 2000)

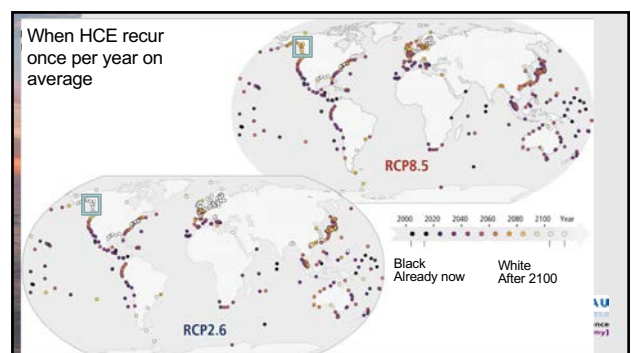
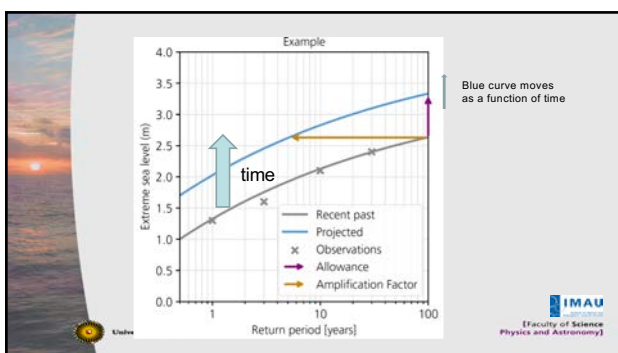
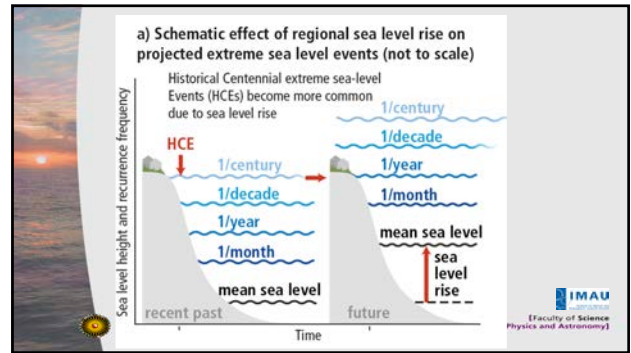


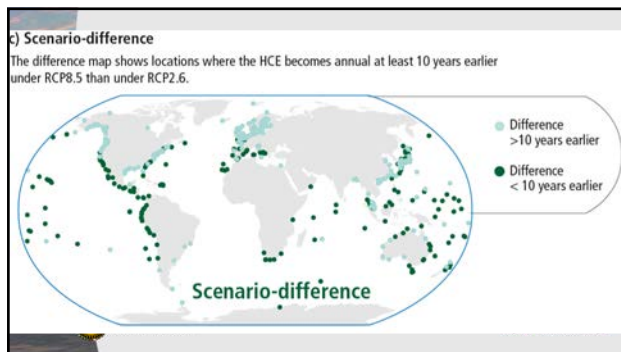












Wrap up

- Sea level is a strong signal for emission reductions because of long term projections (**Plan B**)
- Accelerated Ice sheets mass loss
- Extremes are getting more and more important in the discussion
 - Increased adaptation needed at many locations within decades
 - Mitigation benefits large at mid-latitudes

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