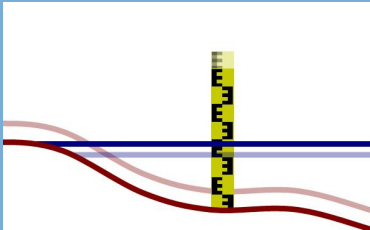


Influences of Vertical Movements of the Earth Surface on Long-term Water-level Variations

- > Reasons for long-term sea-level variations derived from tide-gauge observations

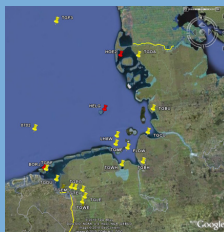


- > Sea-level data refer to gauge zero points
- > Observations suggest increasing water levels
- > Caused by vertical land movements ?
- > Vertical land movements and real sea-level changes superimpose

- > So, absolute and relative sea levels must be distinguished:
 - > Sea-levels related to a uniform global reference system
 - > Sea-levels related to the immediate surroundings

Influences of Vertical Movements of the Earth Surface on Long-term Water-level Variations

- > Knowledge of both information is important:
 - > Absolute sea-level changes: indicator of global climate change
 - > Relative sea level changes: input data for coastal protection projects
- > Using continuous GNSS¹⁾ – sites at tide gauges (GNSS@tide)
 - > Detection of vertical land movements ⇒ unbiased sea-level data



GNSS¹⁾ = Global Navigation Satellite System