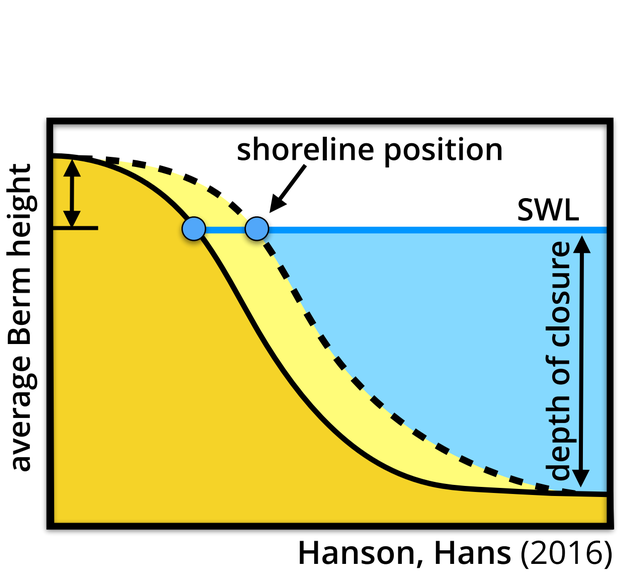
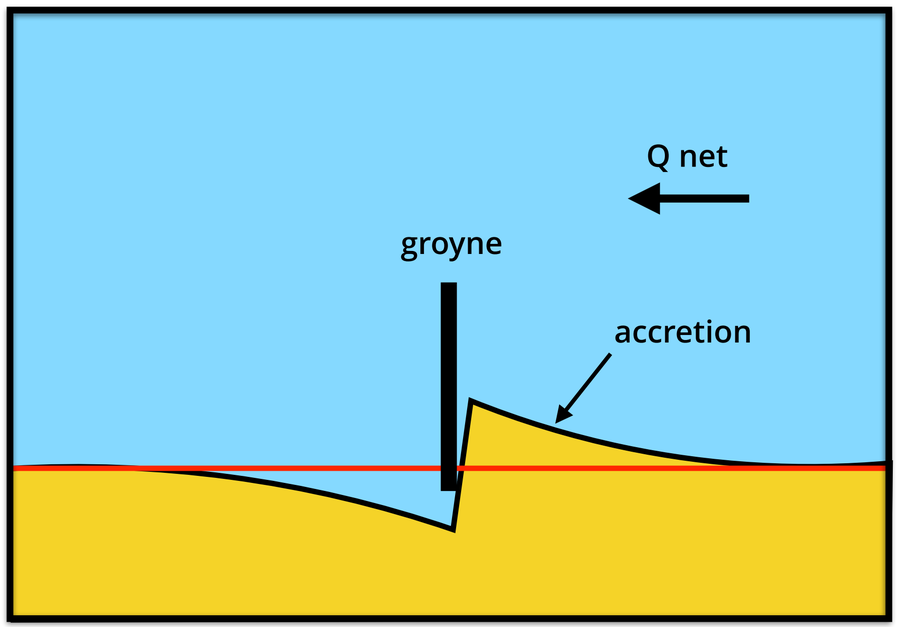
1-line model

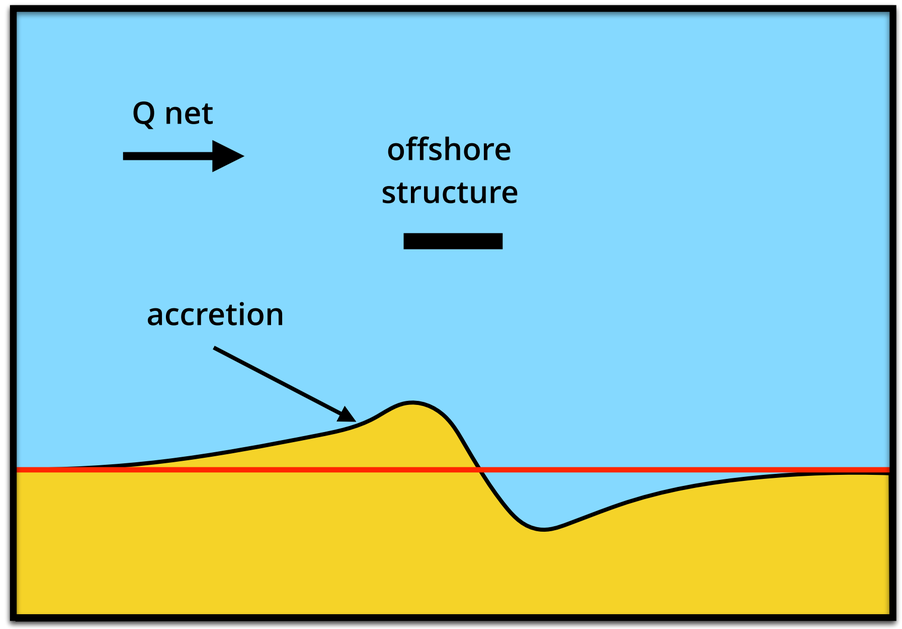
- The 1-line concept rests on a common observation that the beach profile maintains an average shape that is characteristic of the particular coast, apart from times of extreme change (i.e. storms).

- Assumption: **long term shoreline changes** is induced by **longshore sediment transport** caused by **waves breaking at an angle** to the shore and **wave induced nearshore current** circulation.



Hanson, Hans (2016)





- First 1-line model was presented by Pelnard-Considère (1956) who examined the behaviour of groynes on a beach.

Challenges

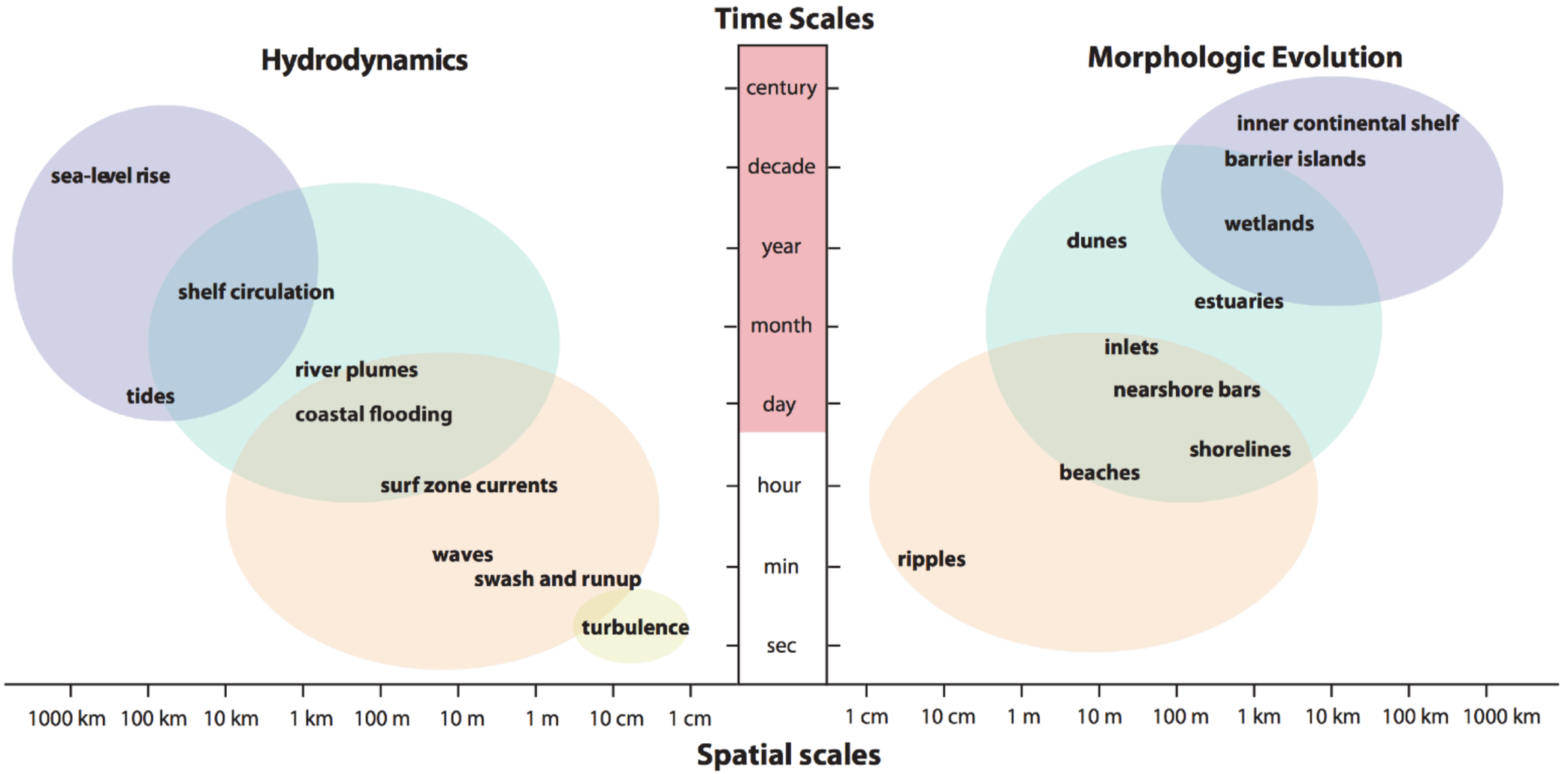


Figure 2. A conceptual representation of hydrodynamic processes and the morphologic evolution of coasts. The left side of the diagram indicates examples of fluid processes that influence changes in the morphologic features shown on the right. The processes and the features they shape occur on a wide range of spatial and time scales. The red shading indicates time scales over which humans also influence both processes and features in the nearshore environment.