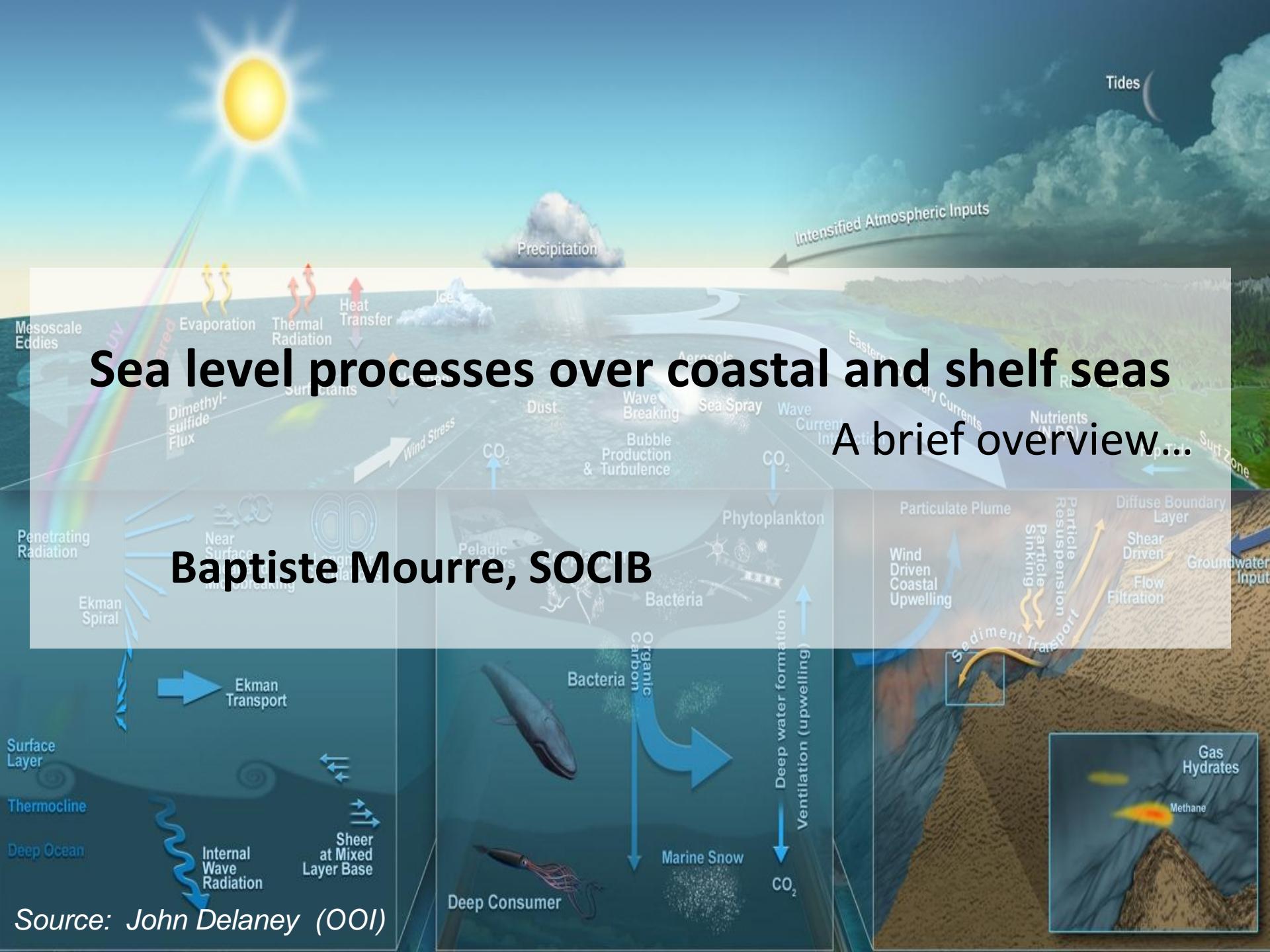


# Sea level processes over coastal and shelf seas

## A brief overview...

Baptiste Mourre, SOCIB

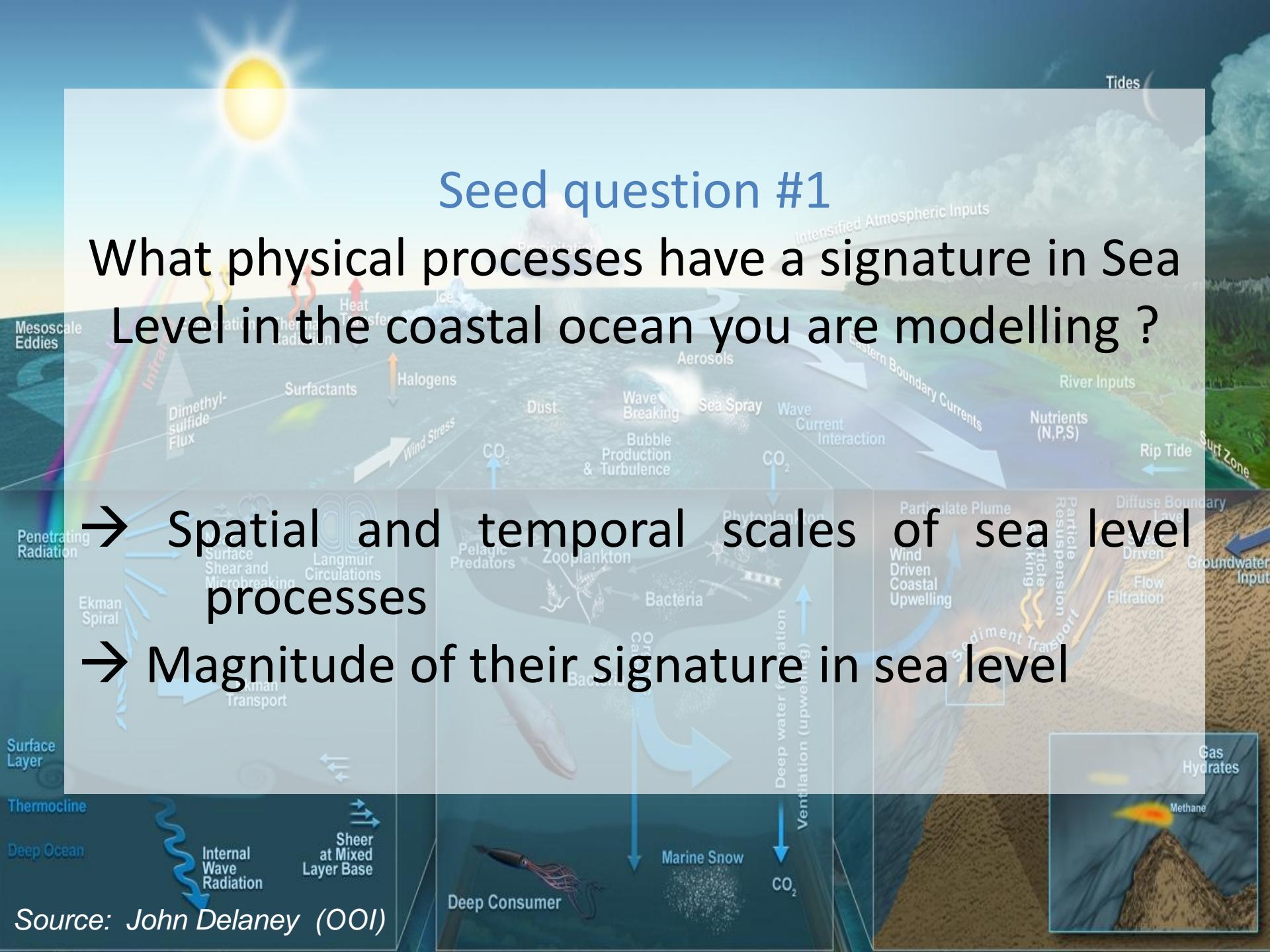


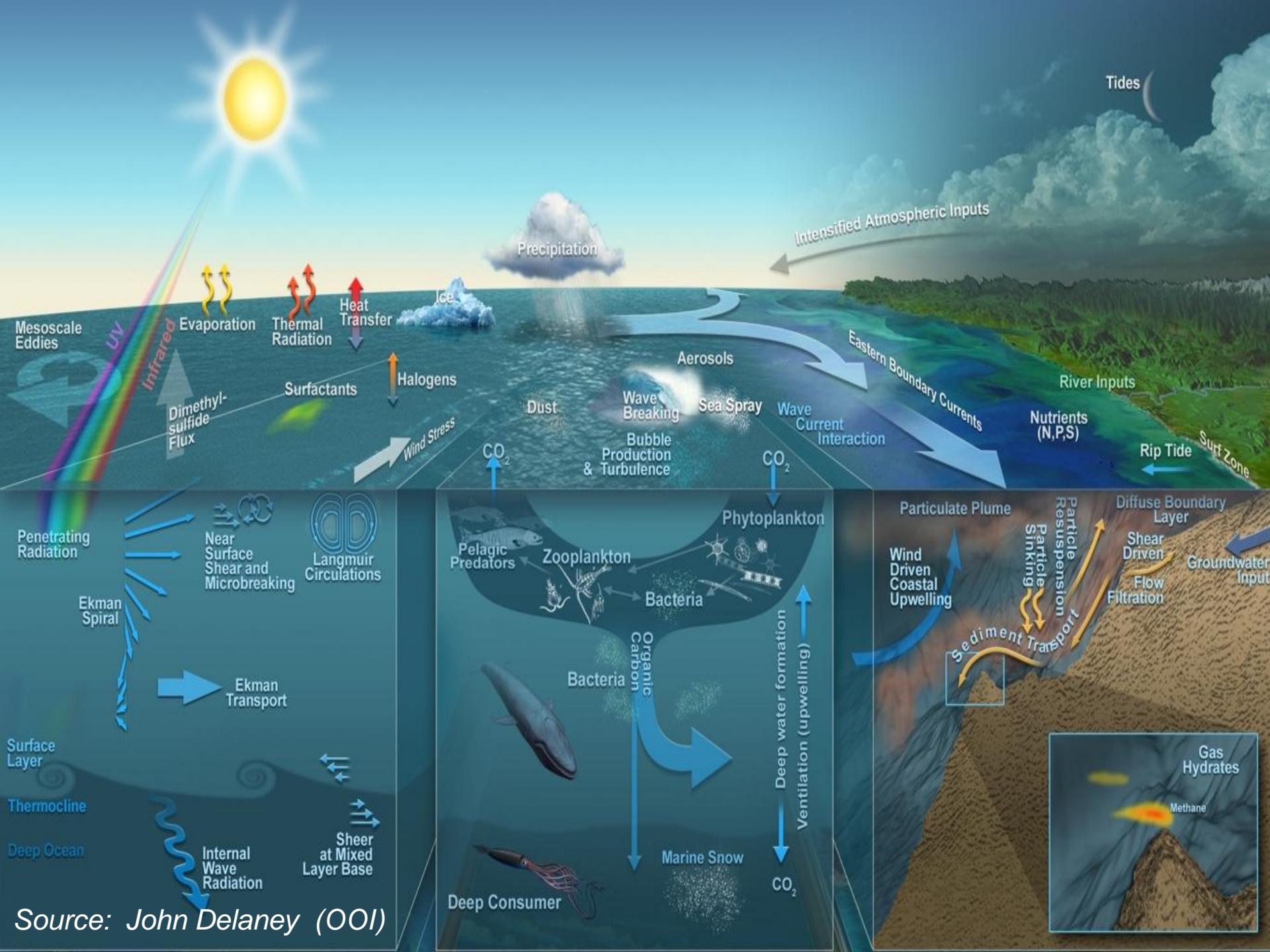
Source: John Delaney (OOI)

## Seed question #1

What physical processes have a signature in Sea Level in the coastal ocean you are modelling ?

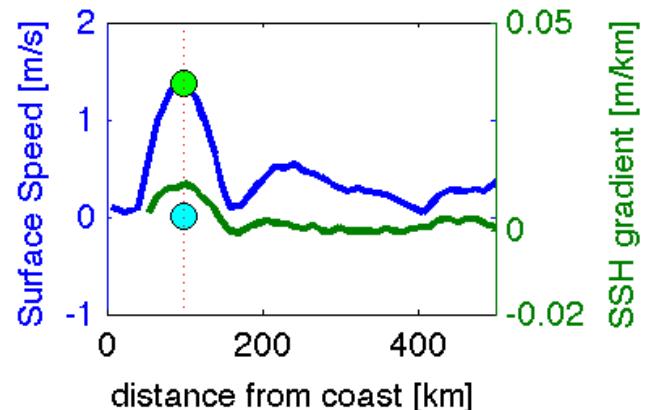
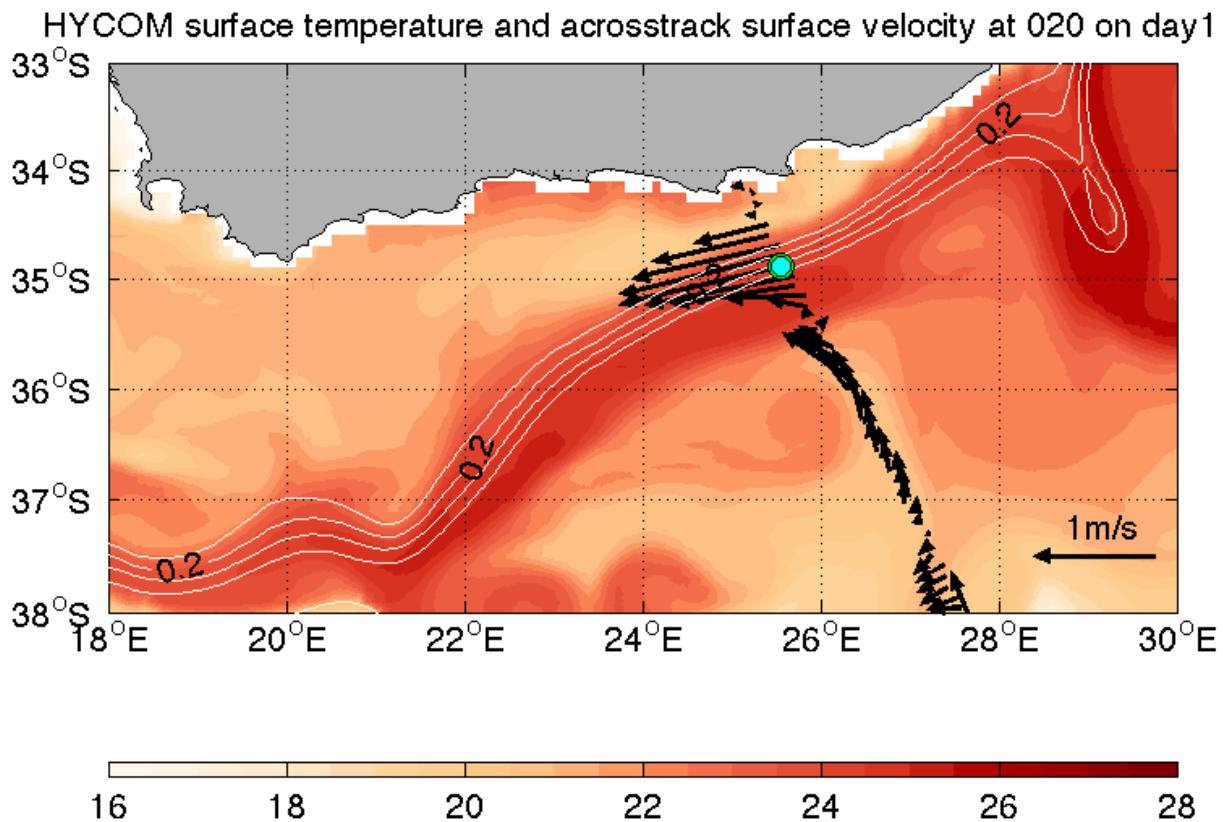
- Spatial and temporal scales of sea level processes
- Magnitude of their signature in sea level





# Neil Malan – UCT/SAEON

## Agulhas current

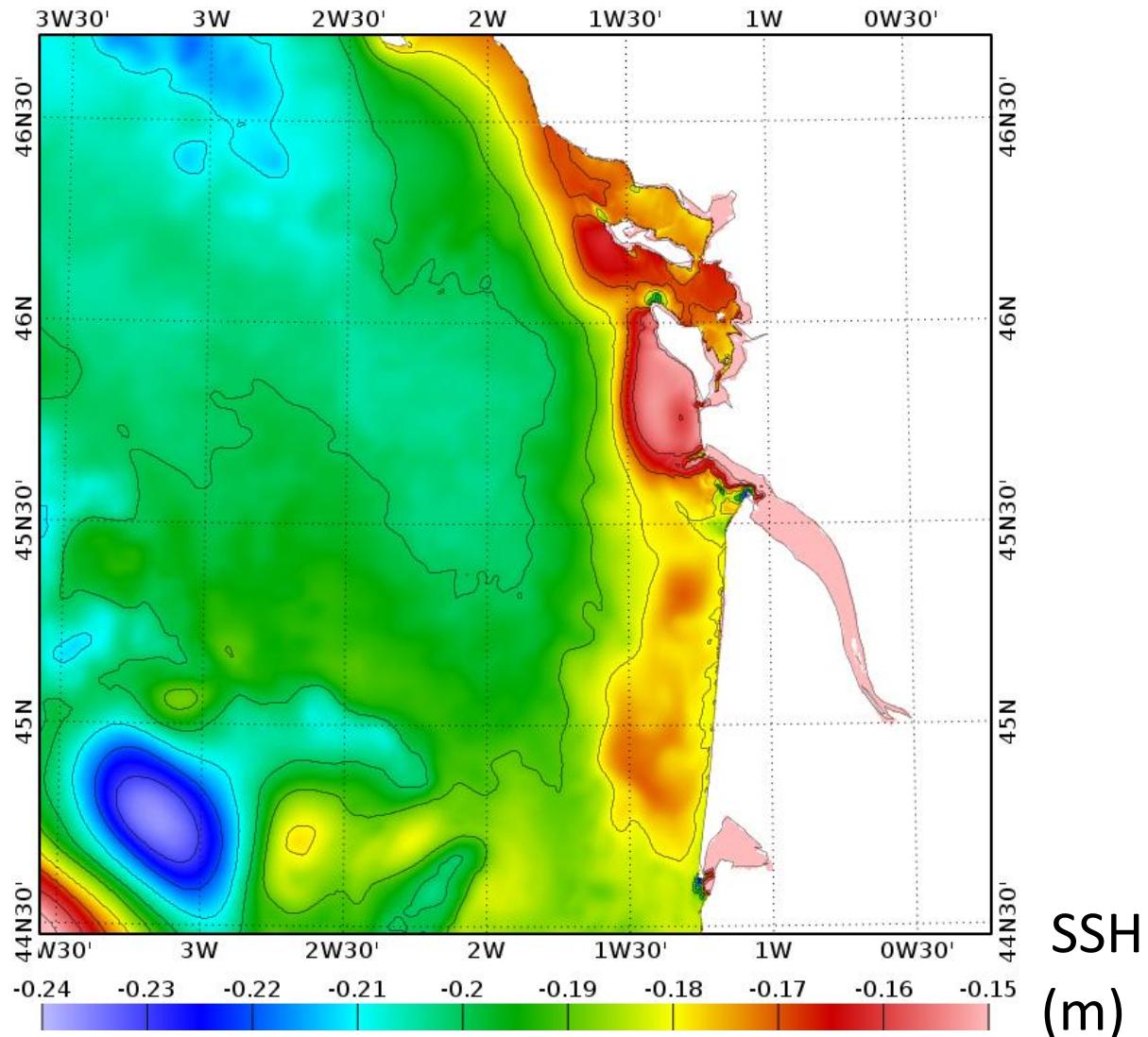


SSH gradient:  $\sim 40\text{cm}$  over  $40\text{km}$

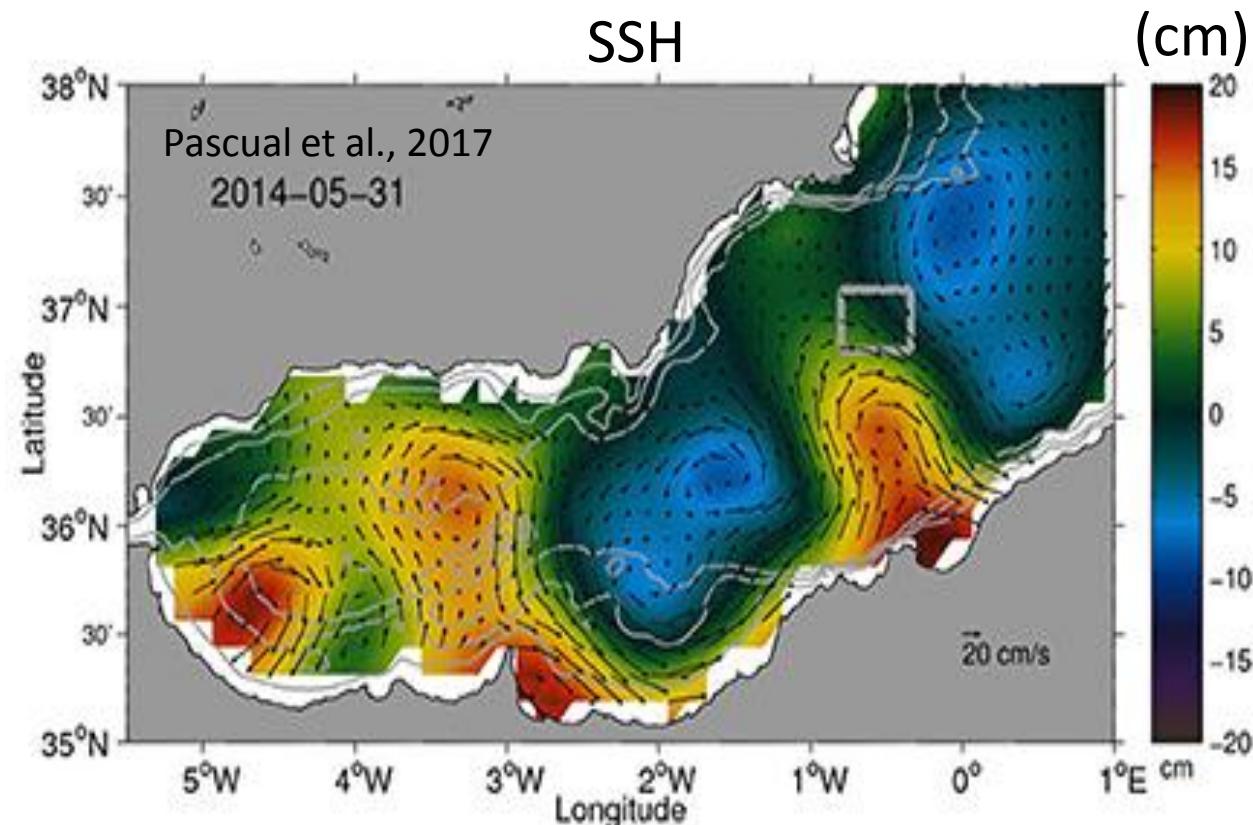
# Florence Toublanc – LEGOS

## Gironde river plume

SSH gradient:  
~ 5cm over 20km

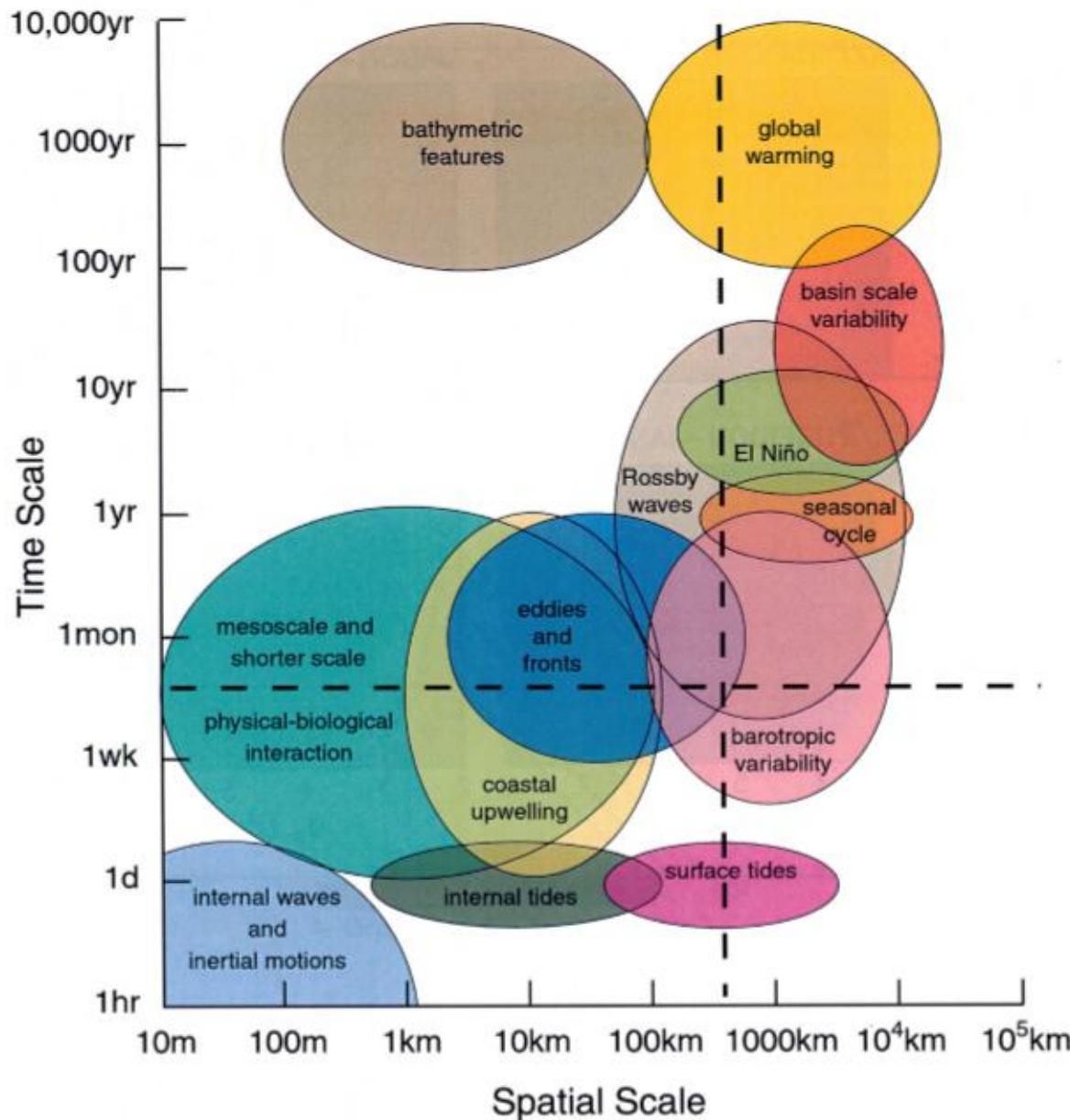


Ananda Pascual – IMEDEA, CSIC-UIB  
Alboran Sea intense salinity front



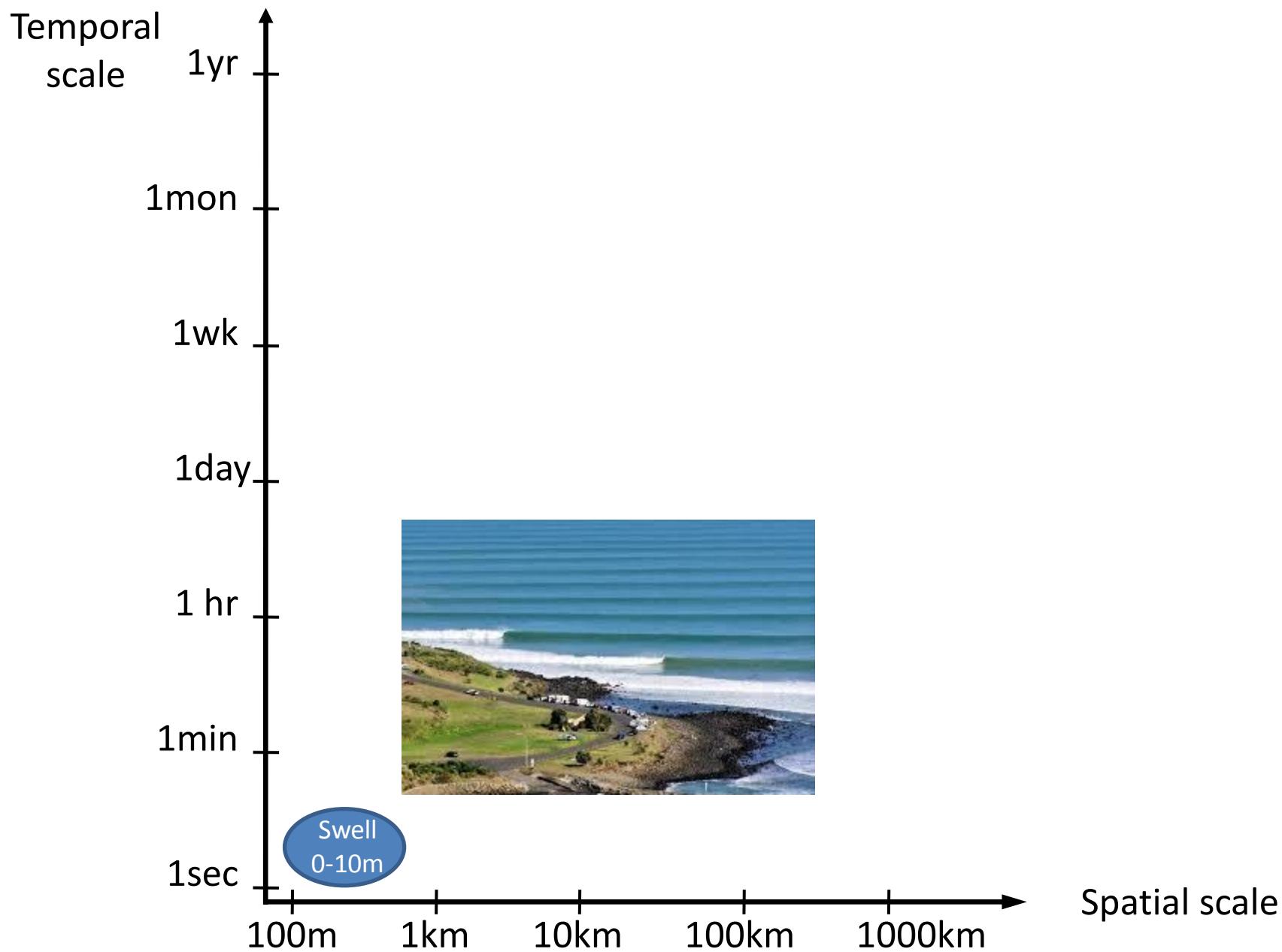
SSH gradient:  
~ 20cm over 60km

# Ocean processes and scales

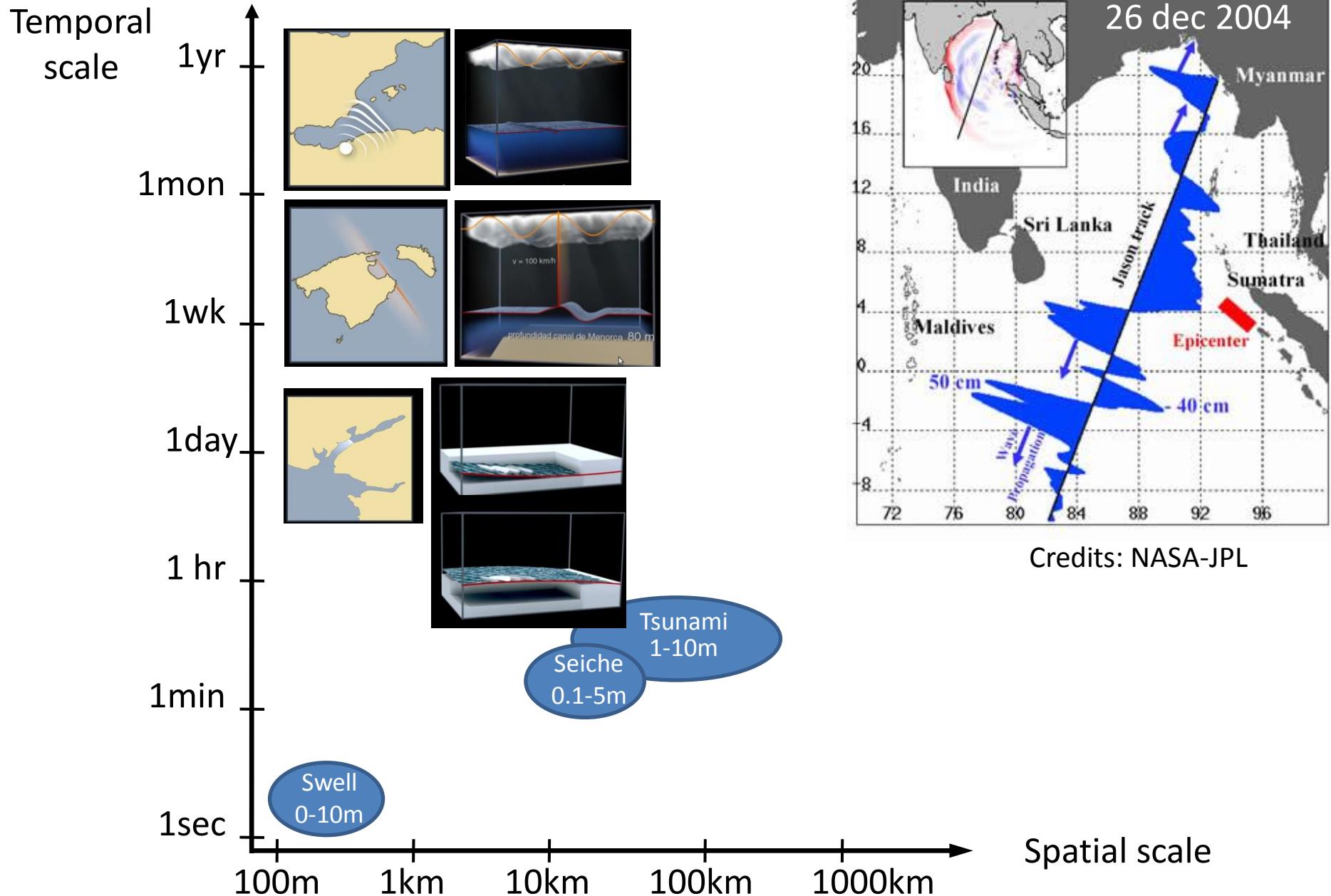


Chelton, 2001

# Coastal processes: scales and impact on sea level



# Coastal processes: scales and impact on sea level



# Coastal processes: scales and impact on sea level

Temporal scale

1yr

1mon

1wk

1day

1 hr

1min

1sec

100m

1km

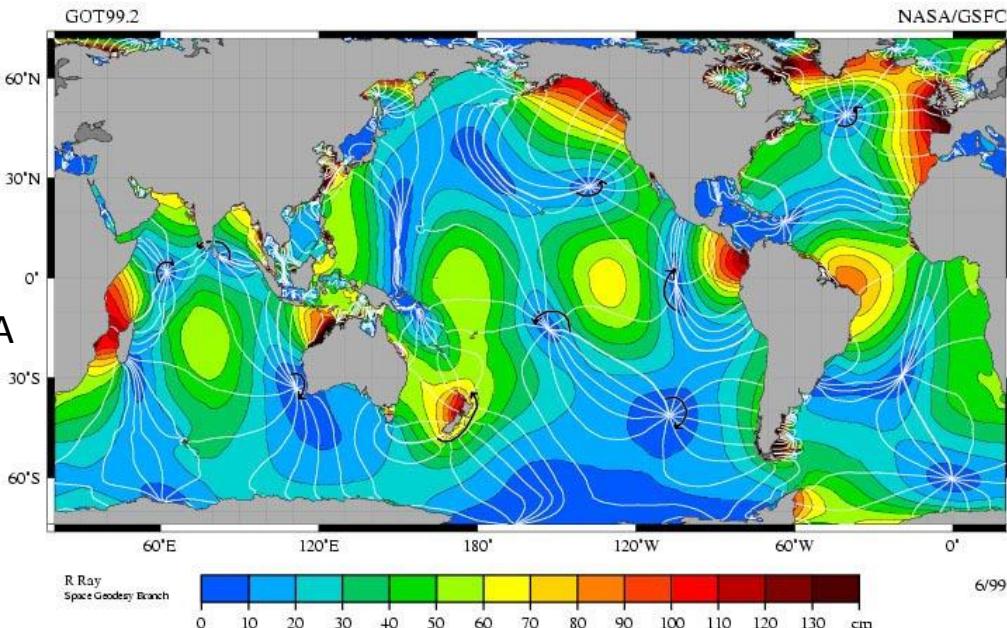
10km

100km

1000km

Spatial scale

Credits: NASA



Internal tides  
0-5cm

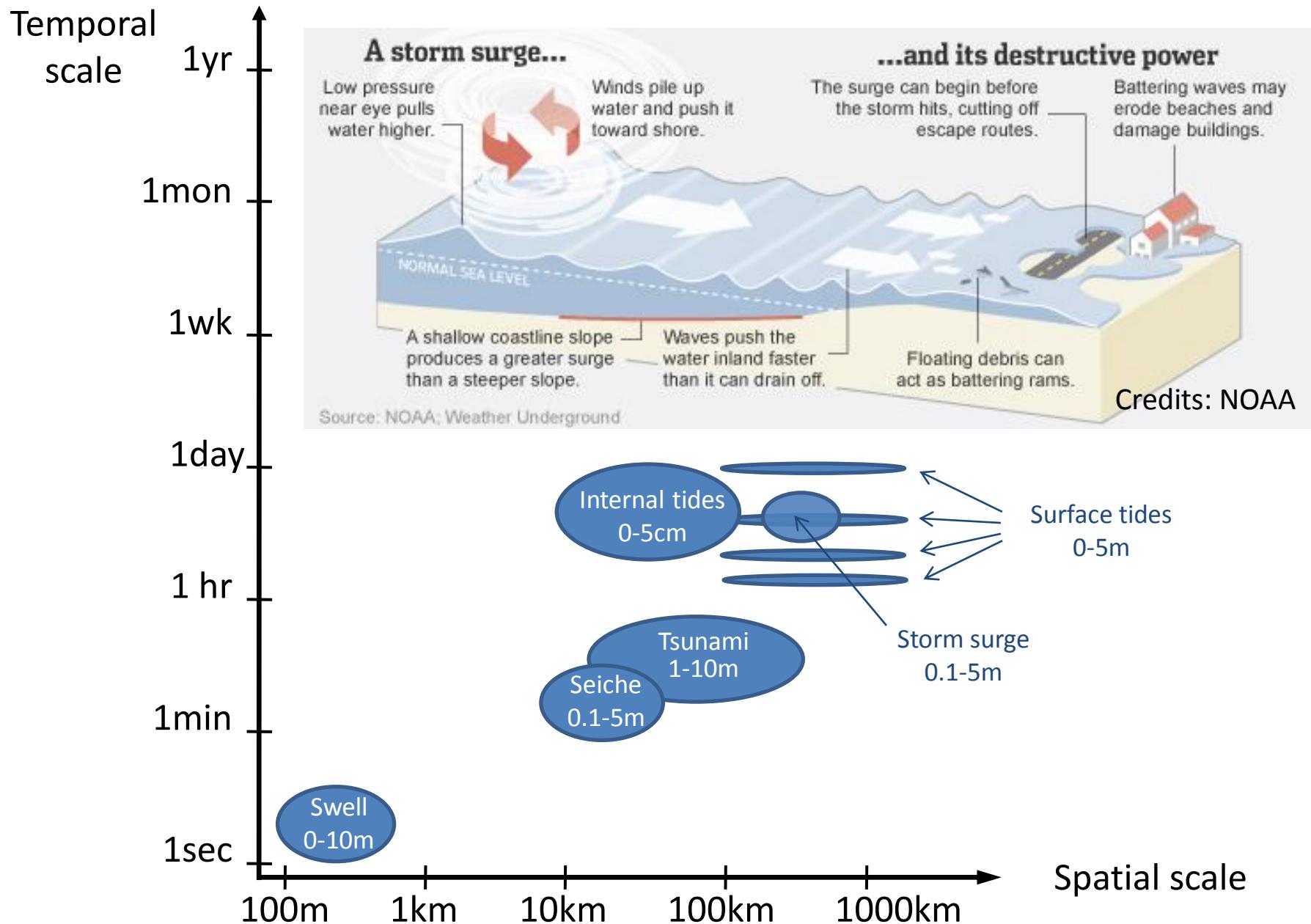
Seiche  
0.1-5m

Tsunami  
1-10m

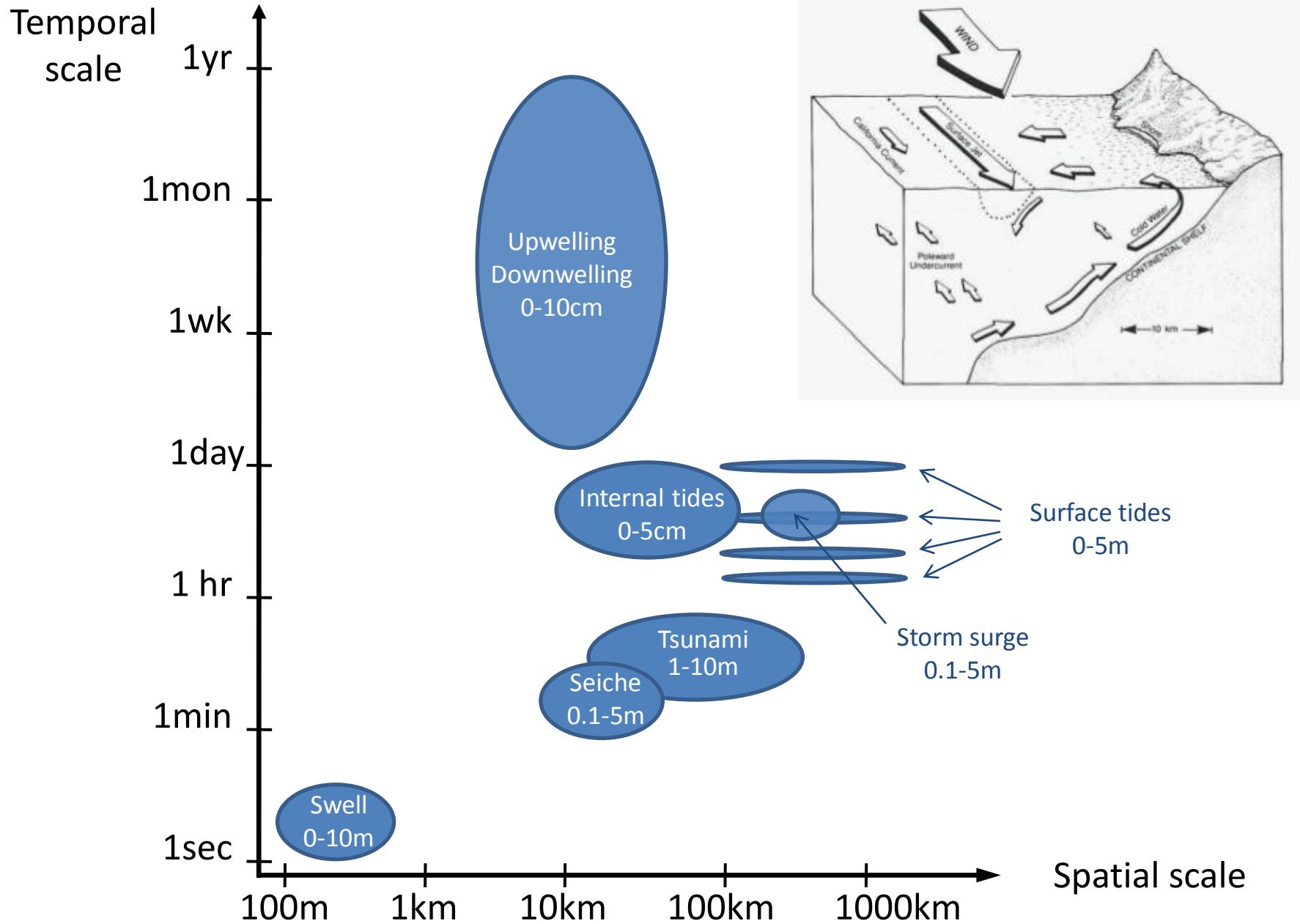
Swell  
0-10m

Surface tides  
0-5m

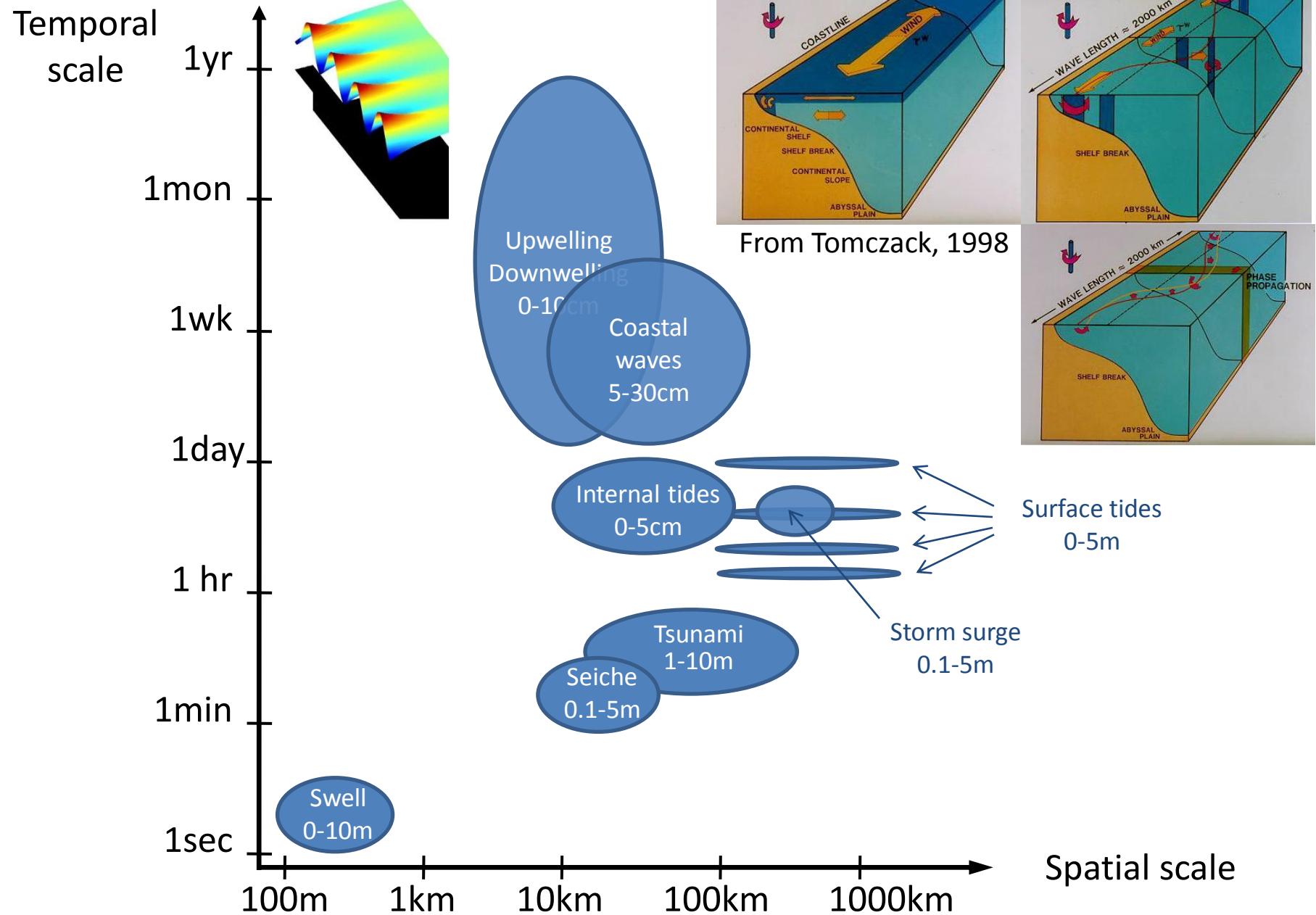
# Coastal processes: scales and impact on sea level



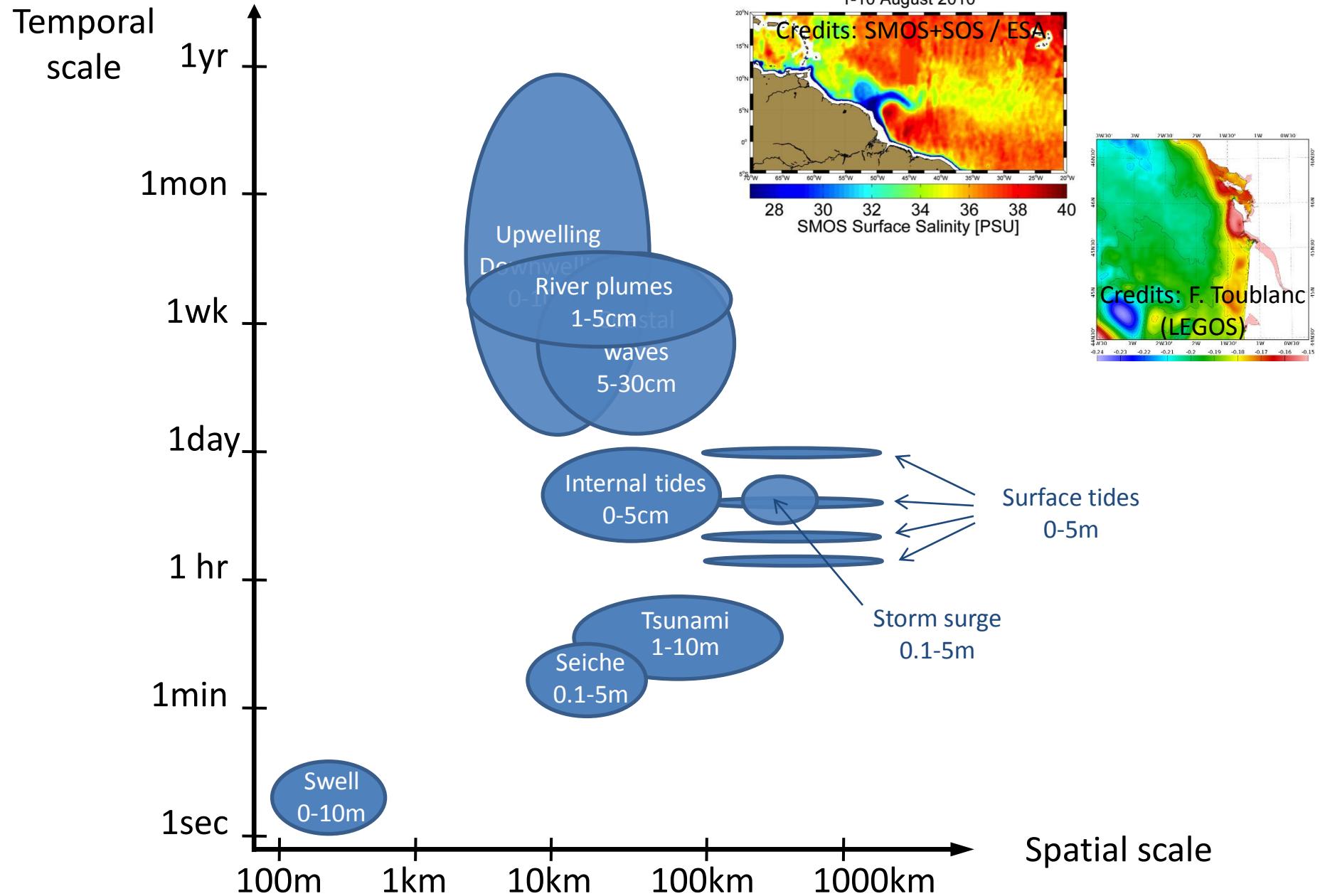
# Coastal processes: scales and impact on sea level



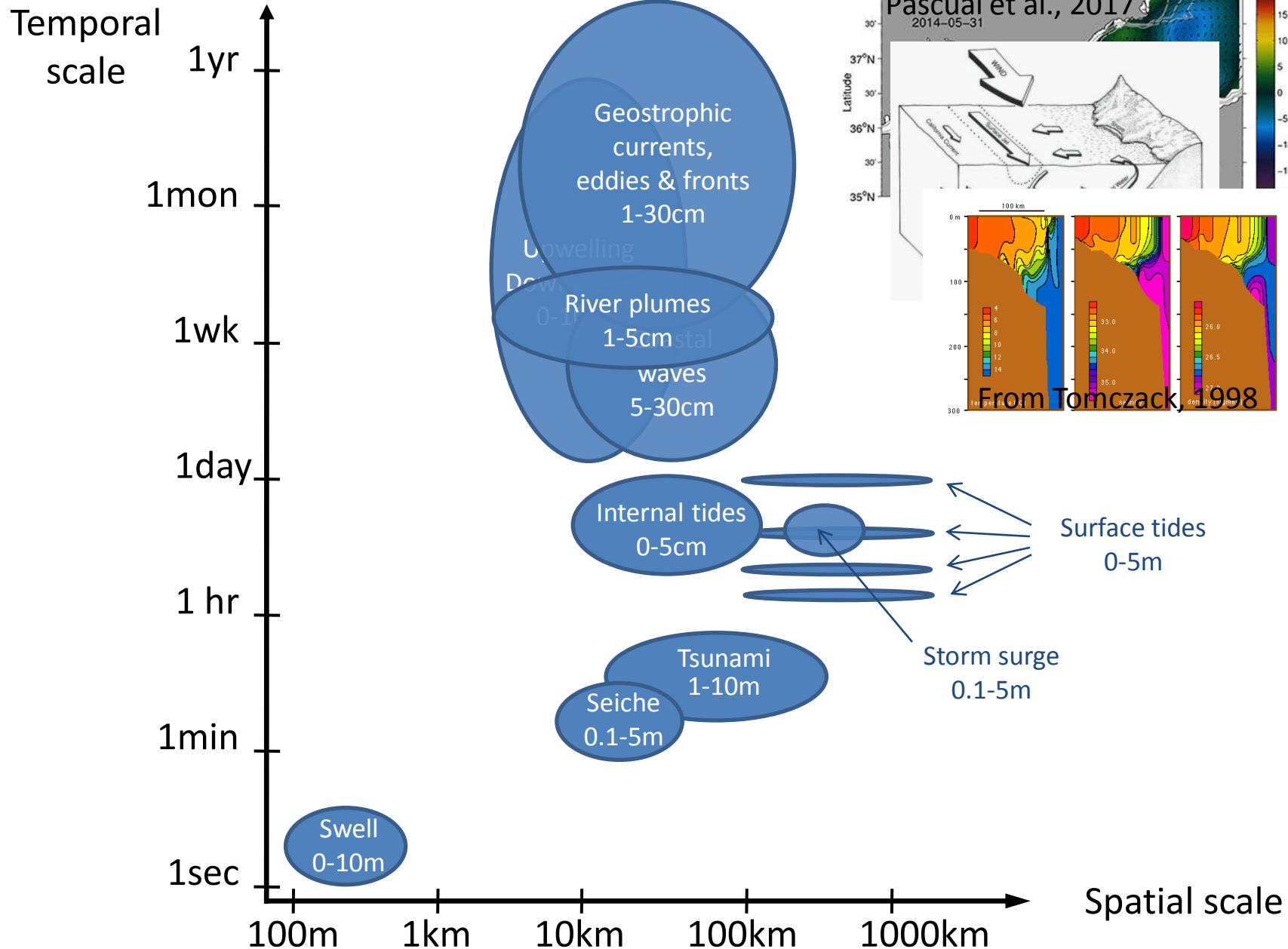
# Coastal processes: scales and impact on sea level



# Coastal processes: scales and impact on sea level



# Coastal processes: scales and impact on sea level



# Coastal processes: scales and impact on sea level

