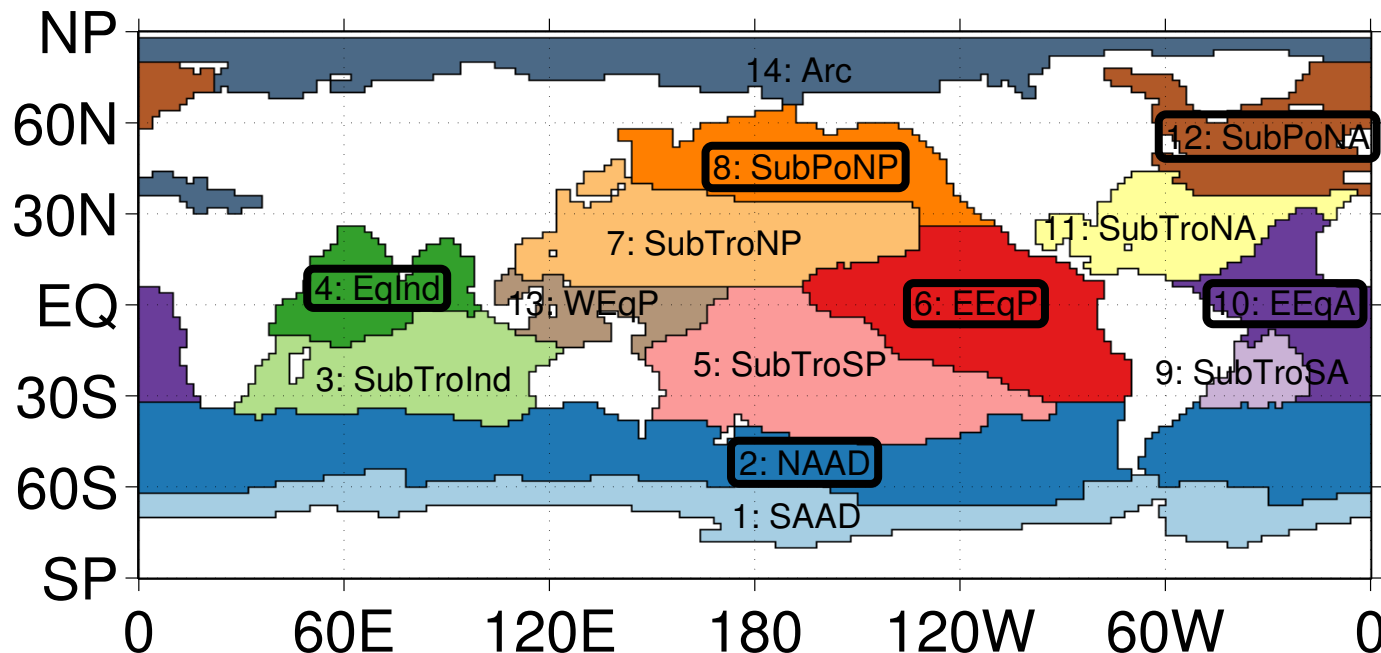
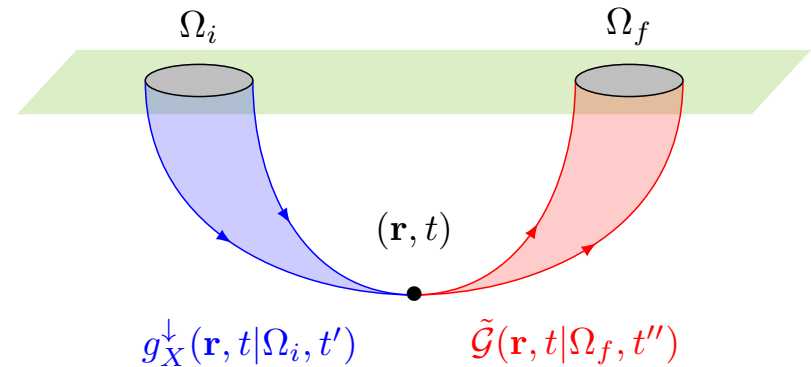
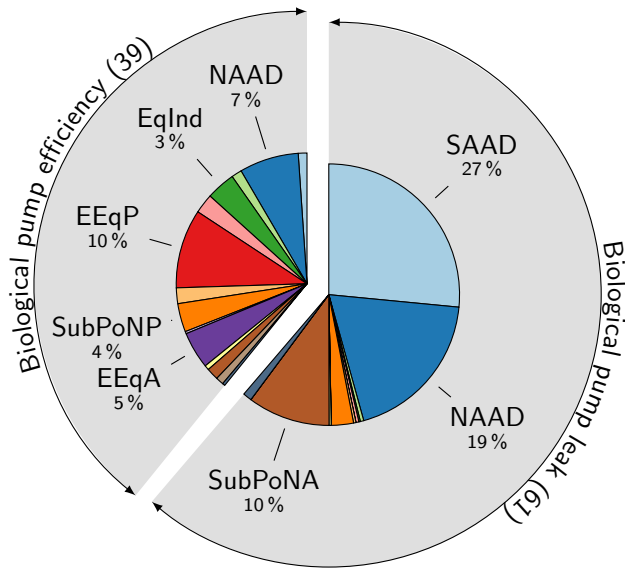


The plumbing of the global biological pump

Benoît Pasquier and Mark Holzer

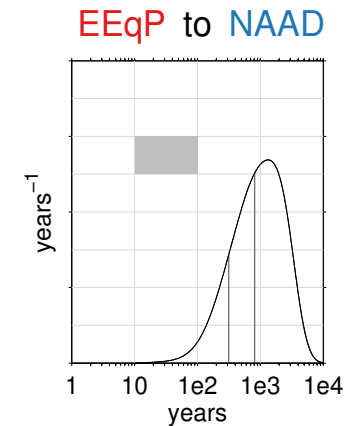
- Biology strips nutrients from surface
- Tracking phosphorus: Green functions
- Reduced ocean surface to 14 regions
- Paint the plumbing of the pump



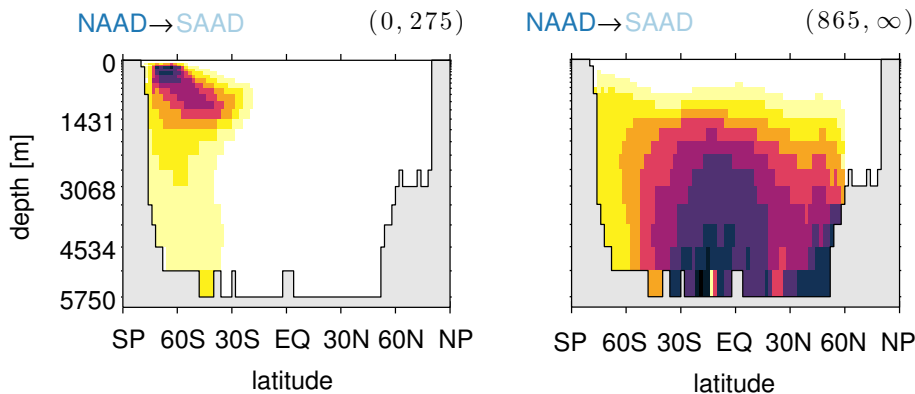


75% of the biological pump leak is due to the Southern Ocean

The SO is the destination of 67% of nutrients



When biologically utilized PO_4 reemerges in the SO, it has mean age of 200 years with mean residence time of 1400 years



The SO \rightarrow SO biological teleconnection is via deep, slow, eddy-diffusive paths