

## Expressions for the deep circulation of the oceans

Three terms general in application but increasingly specific about driving force:

**Deep ocean circulation** – the most general and thus all-inclusive term, which would involve circulation driven by density differences *and* by the winds and tides, and which would involve both vertical and horizontal transport.

**Vertical circulation** – a term emphasizing the sinking and upwelling of seawater, and neglecting the horizontal motion that has much greater distance, because the vertical component is the unusual part requiring explanation.

**Thermohaline circulation** – a term referring to the temperature and salinity of seawater, which together control density and thus most vertical movement.

Two terms that reflect contrasting views of the geographic pattern of global deep circulation:

**Meridional overturning circulation** – a term emphasizing the movement of water along lines of longitude (“meridional”) to where it sinks or rises (“overturning”), and suggesting that east-west (latitudinal) movement can be neglected or may not happen (except in the Antarctic Circumpolar Current in the Southern Ocean).

**Great Ocean Conveyor** – a term for an integrative model of surface and deep circulation, mostly sinking in the North Atlantic, traveling at depth through the Atlantic and Southern to the Pacific, upwelling in the northern and eastern Pacific (and the Southern), and returning via surface currents to the North Atlantic (and thus very “latitudinal” as well as “meridional”).