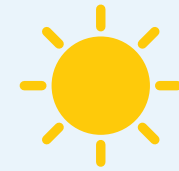
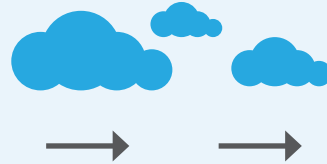


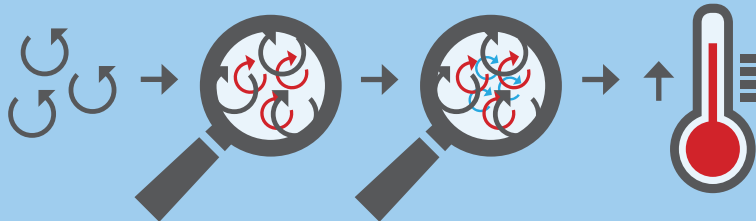
OCEAN ENERGY TRANSPORT



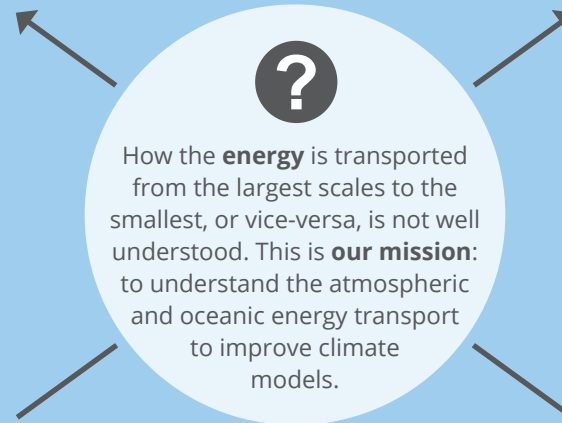
The **sun** and the **moon** are sources of energy for the ocean through heat and gravitation. Heat is converted to energy of motion; the forces of the moon generate ocean tides. Heating the atmosphere passes energy into winds which in turn drive ocean currents and waves. Hence, energy does not vanish but is transported into other forms.



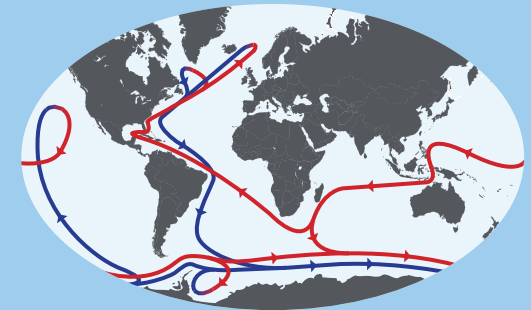
Gravity waves exist at the surface but also in the interior of the ocean. Those waves are influenced by the Earth rotation and called internal gravity waves. Just like surface waves, internal waves can overturn and break, creating small-scale turbulences.



Turbulence occurs on the smallest scales (mm-m). It is generated through eddies or internal waves, and ultimately causes the ocean to warm. Turbulence mixes the oceans water masses and influences the ocean stratification.



How the **energy** is transported from the largest scales to the smallest, or vice-versa, is not well understood. This is **our mission**: to understand the atmospheric and oceanic energy transport to improve climate models.



The **large scale ocean circulation** is driven by the atmosphere for example by winds and heat exchange.



The large scale currents can be unstable and produce smaller vortices, so called **eddies**. These eddies can break into even smaller-scale turbulence.

