



New Planetary Energy Balance, Ocean-Atmosphere Interaction and their Effects on Extreme Events in North Atlantic

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Global warming has now reached the energetic phase of H₂O's return to the ground after the saturation of the atmosphere in evaporation since the 80s and 90s of the last century, which were characterized by severe droughts, mainly in Africa.

This phase is the result of the accumulation of thermal energy exchanges in the Earth-Ocean-Atmosphere system that resulted in the thrust reversal of the energy balance toward the poles. This situation is characterized by a new thermal distribution: above the ocean, the situation is more in surplus compared to the mainland, or even opposite when the balance is negative on the land, and in the atmosphere, warm thermal advection easily reach the North Pole (planetary crests), as well as cold advection push deep into North Africa and the Gulf of Mexico (planetary valleys).

This "New Ground Energy Balance" establishes a "New Meridian Atmospheric Circulation (MAC)" with an undulating character throughout the year, including the winter characterized by intense latitudinal very active energy exchanges between the surplus areas (tropical) and the deficit (polar) on the one hand, and the atmosphere, the ocean and the continent on the other.

The excess radiation balance increases the potential evaporation of the atmosphere and provides a new geographical distribution of H₂O worldwide: the excess water vapor is easily converted by cold advection (polar vortex) to heavy rains that cause floods or snow storms that paralyze the normal functioning of human activities, which creates many difficulties for users and leaves damage and casualties, but ensures water availability missing since a long time in many parts of the world, in Africa, Europe and America.

The new thermal distribution reorganizes the geography of atmospheric pressure: the ocean energy concentration is transmitted directly to the atmosphere, and the excess torque is pushed northward. The Azores anticyclone is strengthened and is a global lock by the Atlantic ridge at Greenland, which imposes on the jet stream a positive ripple, very strongly marked poleward, bringing cosmic cold advection of polar air masses winter over from Europe to North Africa. Hence the enormous meridian heat exchanges north-south, and south-north.

This new spatial thermal provision therefore imposes on the jet-stream a positive ripple on the North Atlantic (Greenland) and eastern Pacific (Alaska); this is the cause of the heat and drought of California, followed by negative waves in eastern US, and Europe.

This is the "New Atmospheric Circulation" predominantly "Meridian", due to the "New Climate" caused by global warming.