



Geodetic signature of an anthropogenic global warming

Olivier de Viron (1,2), Alberto Roman (2), Laurent Métivier (3,1)

(1) University Paris Diderot , Paris, France (deviron@ipgp.jussieu.fr, 00 33 1 44 27 73 40), (2) Institut de Physique du Globe de Paris, Paris, France, (3) LAREG , IGN, Marne-la-Vallée, France

In the next century, the anthropogenic CO₂ release is expected to deeply impact the Earth climate system. This climate changes will result in a different wind and current distribution, as well as a variation of the mass distribution at the Earth surface. Those changes will in return affect the main geodetic observables: the Earth rotation, the gravity field and the shape of the Earth. Our presentation will be dedicated to those changes, estimated from the outputs of the Coupled Model Intercomparison Project (CMIP), in which a large number of Climate models have been run under the hypothesis of a doubling concentration of CO₂ in a 70 years. We will analyse how and why the Earth rotation will be affected by climate changes, and what will be its impact on the stability of the reference frame.