

WATER CYCLE AND RESOURCES

*Dans le cadre de l'école d'été
" Fluid Dynamics of Sustainability
and the Environment "
organisée par l'École polytechnique
et l'Université de Cambridge (UK)*



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Amphi. Gay Lussac
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Département de Mécanique

Water resources are, for the most part, based on the annual water cycle, and, for a small part and only in a few places, on water stored either in underground aquifers or continental glaciers. Both types of resources will be presented and quantified. The hydrologic variability, both in space and time, will be described, and its consequences on water resource availability. The anticipated effects of climate change on this resource will be summarized. Water demand, for food production, industry, energy production and domestic water supply will be compared with water resources. The water balance of Tunisia (in the warm arid zone) and of France (in the temperate climate zone) will be given, and the concepts of virtual water importation (to balance the budget) and of water footprint will be defined. The zone of current and future water scarcity will be outlined. As food production represents about 95% of the water demand, the issue of food production for nine billion inhabitants in 2050 will be discussed, as well as the availability of domestic water supply in megapoles. Water for ecosystems will finally be discussed.



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