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## The OZCAR Critical Zone Observatory Network: an opportunity to address some unsolved problems in hydrology

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The OZCAR (Critical Zone Observatories network) Research Infrastructure (RI) brings together a group of observatories in the critical zone, the thin pellicle on the Earth's surface between the unweathered rocks and the lower atmosphere, which is the living environment of living beings. These long-term observatories were historically created in France to answer specific scientific questions such as the impact of rainfall acidification on forests, the genesis of extreme floods and the understanding of nitrate pollution. They document different compartments of the critical zone (atmosphere, soil, surface water, groundwater, cryosphere, wetlands, biosphere, etc.) through the measurement of a large number of meteorological, hydrological, hydrogeological, geochemical, surface fluxes and vegetation dynamics variables. The aim of OZCAR RI is to foster data sharing between these observatories through a common data portal, to promote the use of the collected data through the synergy between data and models, to allow the development and deployment of new measurement techniques, and to favor interdisciplinary researches. These observatories, and their counterparts at the European scale gathered in eLTER RI, provide highly instrumented sites and platforms that can provide data and experimental sites for addressing some of the 23 unsolved problems in hydrology. The presentation will illustrate this through examples of researches conducted in the OZCAR RI network.

<https://www.ozcar-ri.org/fr/ozcar-observatoires-de-la-zone-critique-applications-et-recherche/>