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Observil - A French network project of urban critical zone observatories

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One significant effect of urbanization is the modification of environmental conditions, with potential effects on the functioning of urban ecosystems and on their ability to perform functions and to provide service. This is due to both the multiple changes of surfaces and soils, and to an increased human pressure. These changes have indeed major negative impacts on natural resources such as air, water, soil, and biodiversity they host, and may affect locally the human thermal comfort, in addition to the climate change. A better understanding of the physical and biogeochemical processes leading to these changes is then crucial in order to propose and to optimize the mitigation and adaptation strategies. Following the recent efforts in the development of Critical Zones Observatories (CZOs), a new research initiative will regroup well-monitored and well-characterized urban field sites all over the French national territory within a National Observation Service called *Observil*. This observatory aims to address a multidisciplinary approach of urban environments, through a smart definition of appropriate variables and indicators required to better describe the physical and geochemical processes involved in the quality and the dynamic of the soil-surface-atmosphere compartments in cities. To do that, a common Spatial Information System dedicated to the creation of a structured observation

database is under construction, in order to regroup the data from a large network bringing together 9 French cities under very contrasted environmental conditions (urban morphology, geology, climate). The main scientific questions addressed by this observation network project will be presented, along with a description of the the selected variables measured on the different sites.