



Nightlights along the Eastern Alpine river network in Austria and Italy as a proxy of human presence

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Understanding the spatial and temporal distribution of human settlements and economic activities in relation to the geographical location of streams and rivers is of fundamental concern for several hydrologic issues such as flood risk and drought management, water pollution and exploitation, as well as stream ecological purposes. Indeed, the human presence close to streams and rivers is known to have consistently increased worldwide, therefore introducing dramatic anthropogenic and environmental changes. This research study analyses the spatial and temporal evolution of human settlements and associated economic activity, derived from nighttime lights, in the Eastern Alpine region. Nightlights, available at a 1 km spatial resolution and for a 22-year period, constitute an excellent data base, which allows to explore in details human signatures. In this experiment, nightlights are associated to five distinct distance-from-river classes, by using the CCM river network data base. From the temporal perspective, nightlights in correspondence of each distance-from-river class within each study region show an overall increasing trend, whereas the spatial trends differs among the study regions. More information about the analysis and project are available at: <http://www.water-switch-on.eu/>.