Geophysical Research Abstracts
Vol. 21, EGU2019-19032, 2019
EGU General Assembly 2019

Study of hydraulic connectivity to sea by discrimination of hydraulic and hydromechanical effects induced by tidal loading in the coastal aquifer system of La Plata river estuary

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Coastal aquifers in urban areas are submitted to high antrophic pressure. As a consequence, these overexploited aquifers have salinization problems and the water resources is reduced.
The salinization could be avoided by locating the pumping wells in those sites where the aquifers are hydraulically poorly connected to the sea.
The hydraulic connection can be analyzed by the hydraulic diffusivity obtained from piezometric heads observations in piezometers located next to the coastline. However, these head observation reflects not only the hydraulic effects, but also hydromechanical effects induced by tidal loading, which could not represent the hydraulic connection to the sea.
In this work we identify the perturbations induced by hydraulic and hydromechanical effects in order to define the hydraulic connectivity to the sea in the coastal aquifer system of La Plata river estuary.