AN EXAMPLE OF CHARACTERISATION OF GROUNDWATER FLOW BY THE APPLICATION OF THERMOMETRIC AND ELECTRICAL CONDUCTIVITY IN SITU MEASUREMENTS

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In this paper are presented the results of an interesting in situ investigation campaign carried on in the plain of S. Eufemia (CZ), where in the aim of studying the peculiar properties of groundwater flow, thermometric and electrical conductivity measurement have been done. The plain of S. Eufemia, in the italian region of Calabria, is 120 km2 large and it is a typical olocenic coastal plan, which was made by the successive deposition of alluvial sediments.Carrying on the research it has been kept into account that many studies have confirmed that the groundwater temperature, associated to electrical conductivity data, can provide important information about groundwater flow, about filtration velocity and about changes in permeability of the different parts of the aquifer. The study has been carried out both with traditional measurements of groundwater levels, made in 62 wells located in the considered area, and with temperature and conductivity logs (38 wells). The first analysis of the data obtained from the logs, compared with some stratigraphic reports, let the authors formulate some reasonable hypothesis about lithological features of the aquifer. Then it has been possible to identify the detailed structure of the aquifer and some directions of preferential flow pathways by the representation of the temperature trend on horizontal and vertical planes and by the trend of the piezometric heads.This paper will present the interpretation of temperature and electrical conductivity logs, which indicated important pieces of information about the groundwater flow, we couldn't find out by traditonal piezometric measurements.