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خلاصه مقاله:

Saltwater intrusion into freshwater in coastal areas has been a serious concern for many countries. Providing fresh water in some regions is very crucial. In fact, the areas that are prone to encountering salt water zones should be checked meticulously. The preferred method for such investigation is a precise ۳-D model of distribution of fresh and salt water In order to reach such a model, reliable measurements and comprehensive resistivity interpretations are needed. The purpose of this study is to use geostatistical simulations in order to provide a ۳-D aquifer model from the results of the resistivity studies. This means to delineate the boundary of saltwater and freshwater in the aquifer. Geostatistical simulation provides a robust tool for presentation of the results achieved from interpretation of resistivity data. Geostatistical simulations by assessing the risk and uncertainties regarding the measurements at hand, provides a method for a precise economical study and therefore a more detailed financing and planning scheme. Most of the prediction/estimation methods involve, in some way, an averaging method in which smoothing and reducing the amplitude of fluctuations among their characteristics are happened. However, geostatistical simulation methods are able to reproduce the minor and local differences more precisely than other methods. In other words, the simulation does not reduce the variance of the data so the minimum and maximum values are reproduced. The required data for this study were acquired in Borazjan plane in the Boushehr province, south of Iran. ۸۲ Vertical Electrical Sondage (VES) with Schlumberger array were conducted along with ۶ profiles in the Study area. The distance between ۲ subsequent measurements are ۲۰۰ m, and lateral distance between ۲ neighbor profiles is ۱۰۰۰ m. Distances between current electrodes (AB) are increased from ۱.۵ m to ۱۰۰۰ m. Each logarithmic decade contains ۶ different measurements. Direction of survey oriented North-West to South-East in each profile. After the data gathering, with the use of electrical software, apparent resistivity sections are provided. In the next step, data are inverted using a software and the standard curves. The best multi-layered ground for the Earth is obtained. After the interpretation of the initial data, the real resistivity values of the aquifer are introduced to sequential Gaussian simulation algorithm as input data. Regarding the concept of ۱D resistivity inversion, those maps and sections are considered important that ... manifest coherent amplitude of resistivity variation

کلمات کلیدی:

ژئوالکتریک, زمین آمار, آب شور و شیرین, شبیه سازی, تغییرنما (واریوگرام)

لینک ثابت مقاله در پایگاه سیویلیکا: