عنوان مقاله:

Designing a quality monitoring network of Gonabad Aquifer using principal component analysis (PCA) method

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خلاصه مقاله:

In order to efficiently manage groundwater resources, determination of the main sampling points is very important to reduce sample size and save time and cost. Principal Component Analysis (PCA) is one of the data reduction techniques that has an important role in identifying insignificant data. In this research, ۲۲ wells of Gonabad plain with a statistical length of ۱۰ years (۲۰۰۷-۲۰۱۶) were used. In the studied area, the annual average of ۱۱ quality parameters of Ca, Mg, Na, EC, TDS, Cl, SAR, HCO۳, SO۴, TH, pH groundwater was investigated by using this technique to determine the quality effective wells in the aquifer of this plain. Using PCA, the relative importance of each well was calculated between ۰ (for completely ineffective well) to ۱ (for the very effective wells). The results showed that among the ۲۲ wells in the study area, ۷ wells were identified as the quality effective wells of Gonabad plain, which had a good dispersion in the region and could play an important role in reducing sampling costs.

کلمات کلیدی:

Effective well, Gonabad plain, Groundwater, Principal component analysis

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