D.C. GEOMETRICAL NULL ARRAYS

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The term geoelectric null array is used for D.C. electrode configurations where the measured or the interpreted potential difference is zero above a homogeneous half-space. For D.C. geometrical null arrays this is achievable by convenient positioning of current and potential electrodes.

Szalai et al. (2002) applied those geoelectric null arrays, which can be easily constructed from traditional arrays. The pairs of traditional and corresponding non-traditional arrays used in different near-surface studies have been as follows: (1) AMN and AM0N0 (three-electrode traditional- and null arrays), (2) AMNB and AM0N0B (Schlumberger- and Schlumberger null arrays), (3) The dipole axial and dipole equatorial array, and their common null arrays.

One of the most surprising results (Szalai et al. 2002) has been that the direction of near-surface karstic fissures can be given with a high accuracy with a joint use of traditional and null arrays, and such a combined technique seems to work up to several different fissure directions. Because these arrays are able as well to locate near-vertical fissures they can be used very effectively in hydrological investigations.

References


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