Geophysical Research Abstracts, Vol. 9, 10962, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-10962

Using hydrogeochemical data as indicators to analyze the flow path in a fault zone

J. Perez-Quezadas (1), A. Cortes (2), O. Escolero (3)

(1) Posgrado en Ciencias de la Tierra, Universidad Nacional Autonoma de Mexico, (2) Instituto de Geofísica, Universidad Nacional Autonoma de Mexico, (3) Instituto de Geología, Universidad Nacional Autonoma de Mexico, (acortes@geofisica.unam.mx / Fax: +52 55 56224192)

Behavior ground water flow path around regional fault is analyzed, using historical hydrological, physicochemical and isotopic indicators. Studied area has been divided in two zones determined by a normal regional fault that defines an escarpment of 100m to 400m. Geology framework is conformed by volcanic rocks presenting an important fractured system. This portion is part of the west recharge area of an extensive alluvial plain with an average altitude of 1700 msnm. Seven pluviometric collectors were settled in order to correlate isotopically the groundwater with the contemporary recharge. Twenty two boreholes were sampled and analyzed in major ions, physical parameters and environmental isotopes, in both sides of the fault. At the same time historical hydrogeological and hydrogeochemical data were analyzed. The data of isotopes and major ions as well as the variation of the static levels and chlorides concentration shows that the regional fault acts like perpendicular conduct to the flow.