

Interactions Between Surface Waters and Groudwater of the Oued Mekkis Basin

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The oued Mikkes basin presents by its three structural sets (Pre-Rif, South Rifain Sillon and the Mid Atlantic Causse) an example of groundwater-river interaction.

The study of the yearly volume of water in this basin shows the influence of geology on infiltration and surface runoff in each basin sector. Indeed, in the Pre-Rif, where the drainage density is high and the geological formations are impermeable and erodable, the surface runoff is rough whereas the infiltration is poor. In Saiss, where the drainage density is mean and where the soil is rather permeable, the flow as well as the infiltration is mean. Finally, in the atlassic mid causse, constituted primarily of lias limestone and dolomitic limestone, and where fracturing is important, the surface runoff is almost nonexistent and the infiltration is at its maximum.

The analysis of the monthly mean flow between 1968 and 2005 shows a rough oceanic system, with a baseflow maintained by springs. The average yearly flows of the river present a temporal variety which is globally decreasing. The yearly hydraulicity has shown a succession of two periods, the first is prior to 1980 and is moist, the second one is later than 1980 and is dry.

The positive correlation between the river flow and the piezometric level, outside the flood periods, let us think of a feeding - drainage relationship between the aquifer and the river, according to the competition between the piezometric level and the topographic level of the river. The recharge is, however, optimal during the stable period, outside the cold periods. The important drop of the level since 1980 is the result of a combination of dryness and overfarming.

Key words: Groundwater–river relation ship; fracturing; drainage density; surface runoff.