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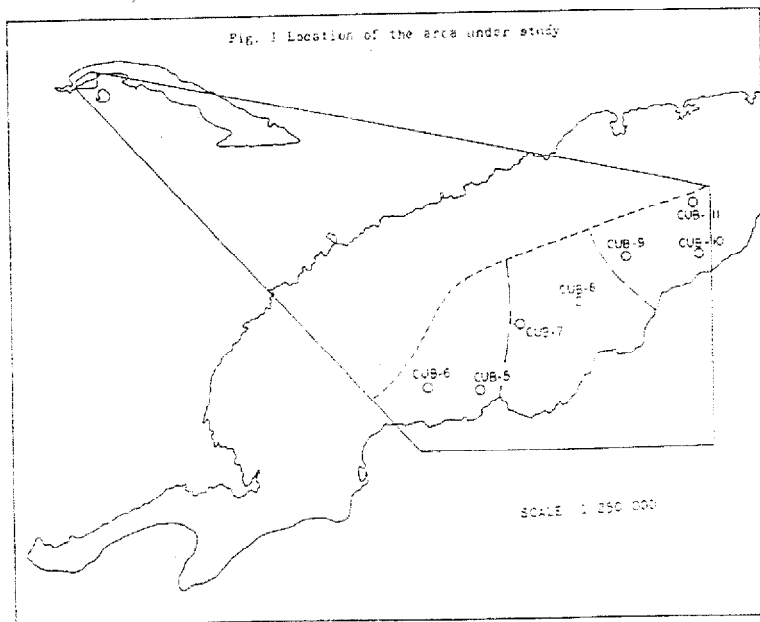
RADIOCARBON DATING IN A KARSTIC COASTAL AQUIFER IN TROPICAL CLIMATIC CONDITIONS.

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The results of the determination of both Calcite Saturation Ratio and PCO_2 , they measured in seven wells distributed in an area of karstic coastal aquifer, are presented. The ^{14}C activity and the groundwater age were calculated by using of four models reported in consulted bibliography, [1,2].

The intrusion of water from the sea, into the coastal aquifer, was examined by means of the Specific Conductivity, Total Dissolved Solids, Ionic Ratios (Mg^{2+}/Ca^{2+} , Cl^-/HCO_3^- , Na^+/Ca^{2+} , among others). This intrusion determines the kinetic factors of the water-geologic medium system.

The intrusion effect on the limestones produces the oversaturation of the dissolution; it contributes in the obtention of low activity of ^{14}C , and, consequently, "ages" which range from 1000 up to 16 000 years are obtained. These "ages" are not in agreement with the available preliminary information related to the isotopic composition ($\delta^{18}O$, δ^2H) measured in rainfalls, springs and wells and the 3H measurements [3] which indicates the occurrence of recent waters.



The effect of the subsurface karstic cavities and fissures influences the low ^{14}C activity calculated. In this case, the diffusivity of the rocks affect the activity measured, according to the theoretical formulations and investigations made in the fissured medium with porous matrix [4,5].

The conditions of the humid tropical climate are shown. In these conditions, the biological activity is intensive and the PCO_2 values calculated are in an order from 10^{-2} - 10^{-3} atm.

In this karstic confined aquifer, the transmissivity values range from 5 000 to 20 000 $\text{m}^2 \cdot \text{day}^{-1}$ and the discharge at the wells, during the pumping test, can reach up to $390 \text{ l} \cdot \text{s}^{-1}$

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