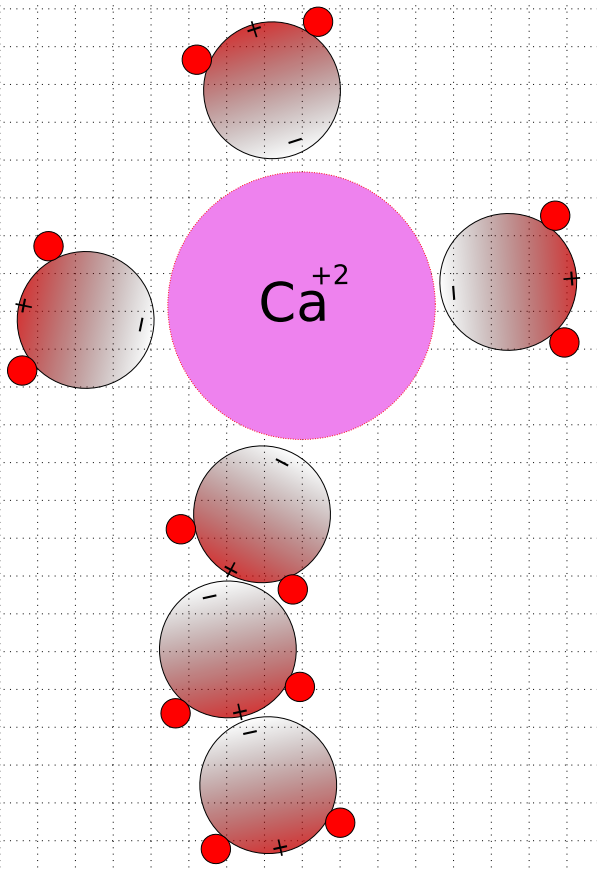
Curso Corto de Hidrogeología

Andrew S. Reeve

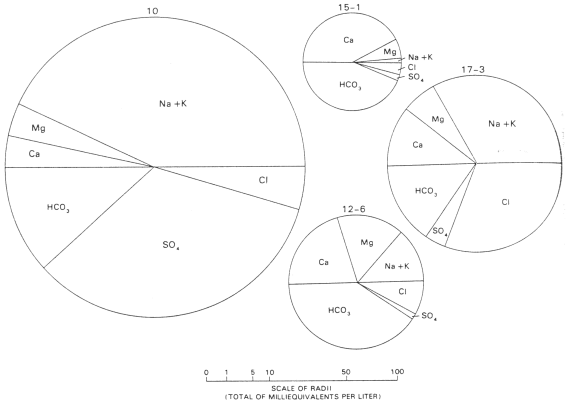
Day 3: Geochemical Plots, Karst Hydrology



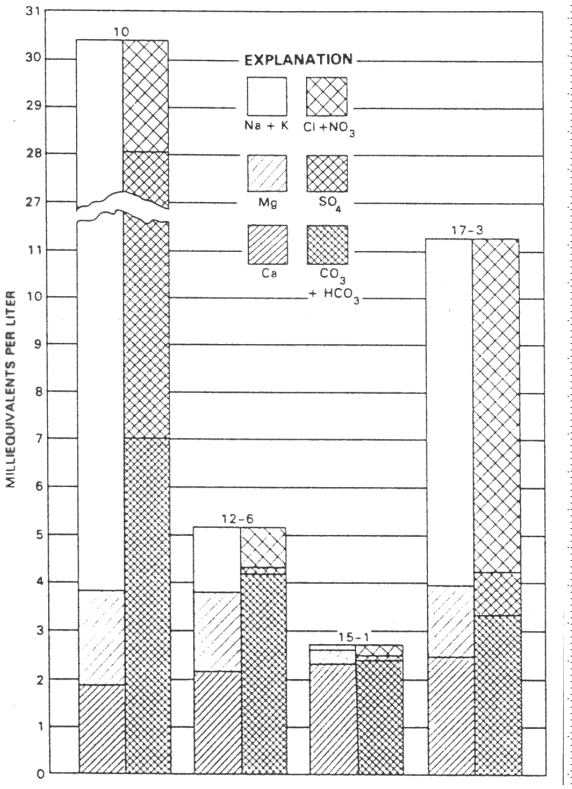
Gráficos de Geoquímicos:

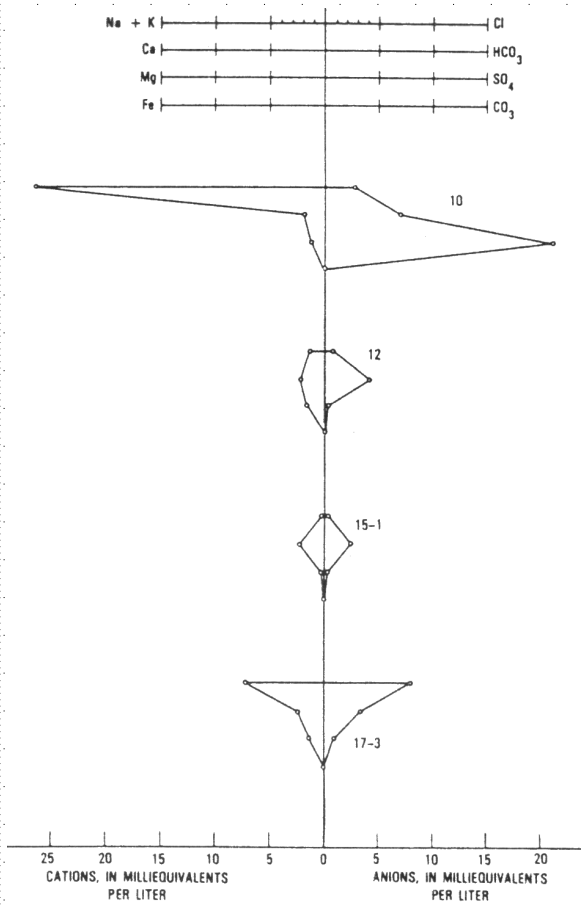
- Agua es polar
  - forma cadenas
  - jaulas alredador iones, aumenta la solibilidad
  - tensión superficial
- Unidades
  - masa/masa (ppm)
  - mol/masa (molalidad)
  - equivalentes (mol de carga)
    - equiv/liter, equiv/Kg
    - 1 mol Ca^{2+} = 2 equiv Ca^{2+}
- Aguas naturales, siete iones son las mayorías de químicos
  - Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}
  - HCO_3^{-}, SO_4^{2-}, Cl^{-}
  - otras en ambientes inusuales?

graficas sencillas [1]

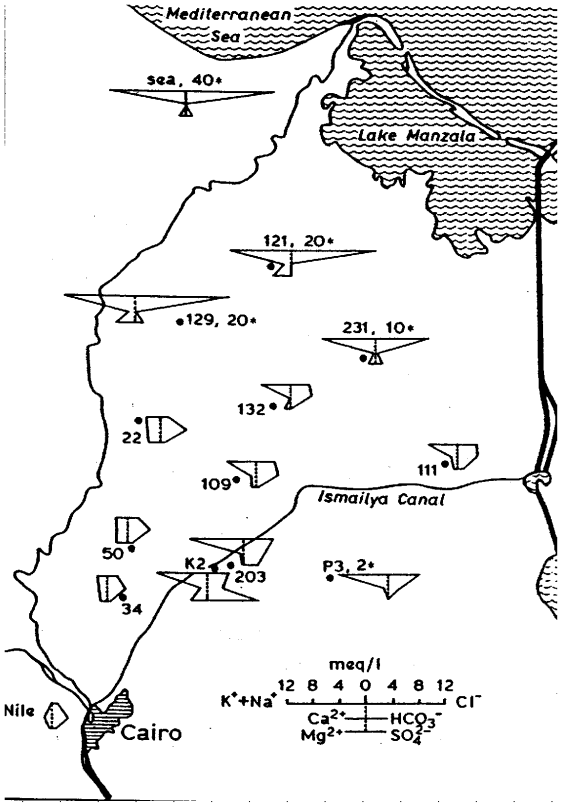


[1] from: Hem, J.D. (1985) Study and Interpretation of the Chemical Characteristics of Natural Water, U.S. Geological Survey, Water Supply Paper 2254



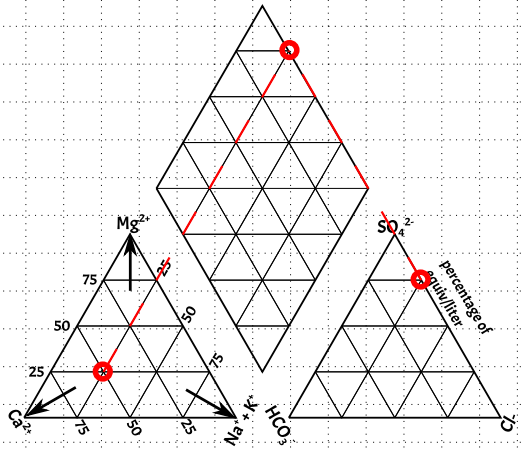


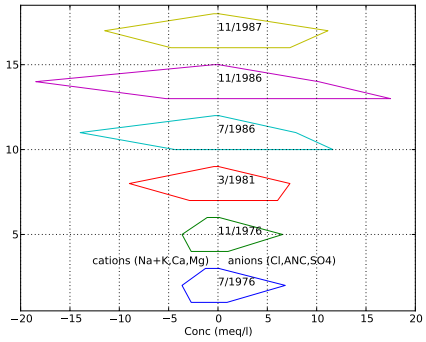
Los Gráficos especializados: Graficas de Stiff [2]



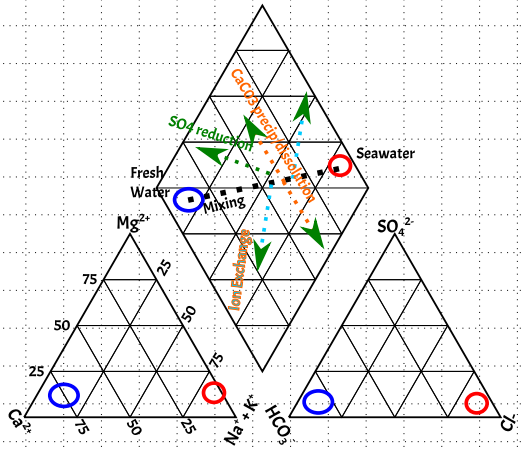
[2] from: Hem, J.D. (1985) Study and Interpretation of the Chemical Characteristics of Natural Water, U.S. Geological Survey, Water Supply Paper 2254 (left) and (right) Appelo, C.A.J. and Postma, D. (1996) Geochemistry, Groundwater and Pollution. AA Balkema, Rotterdam

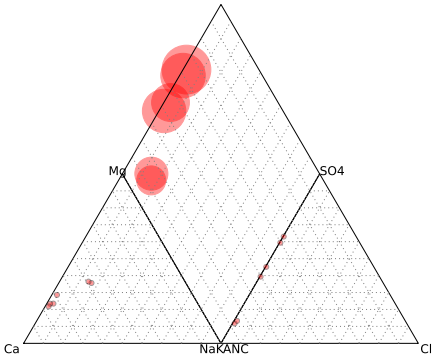
Los Gráficos Especializados: Graficas de Piper



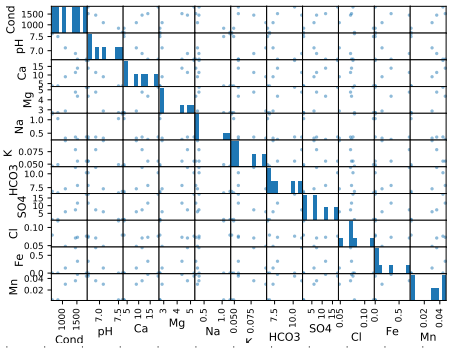


Los Gráficos Especializados: Ejemplo





Los Gráficos Especializados: Ejemplo [3]



Los Gráficos Especializados: Ejemplo

[3]Data from: Cunningham, W.L. and Jones, R.L. Jones (1990) Long-term effects of surface coal mining on ground-water levels and quality in two small watersheds in eastern Ohio, U.S. Geol. Survey, Water-Resources Investigations Report 90-4136