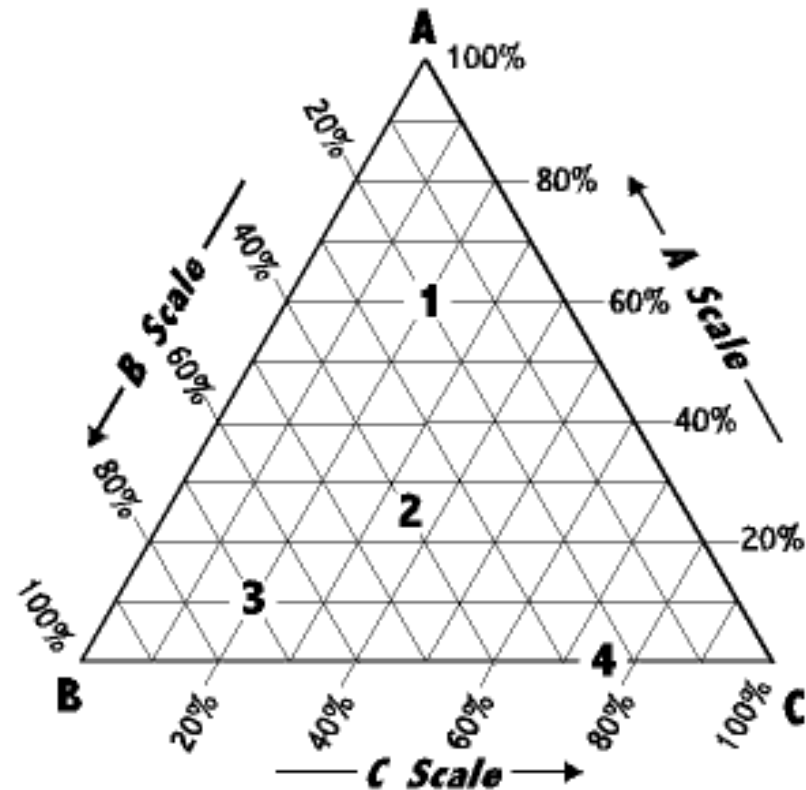


Ternary Diagrams

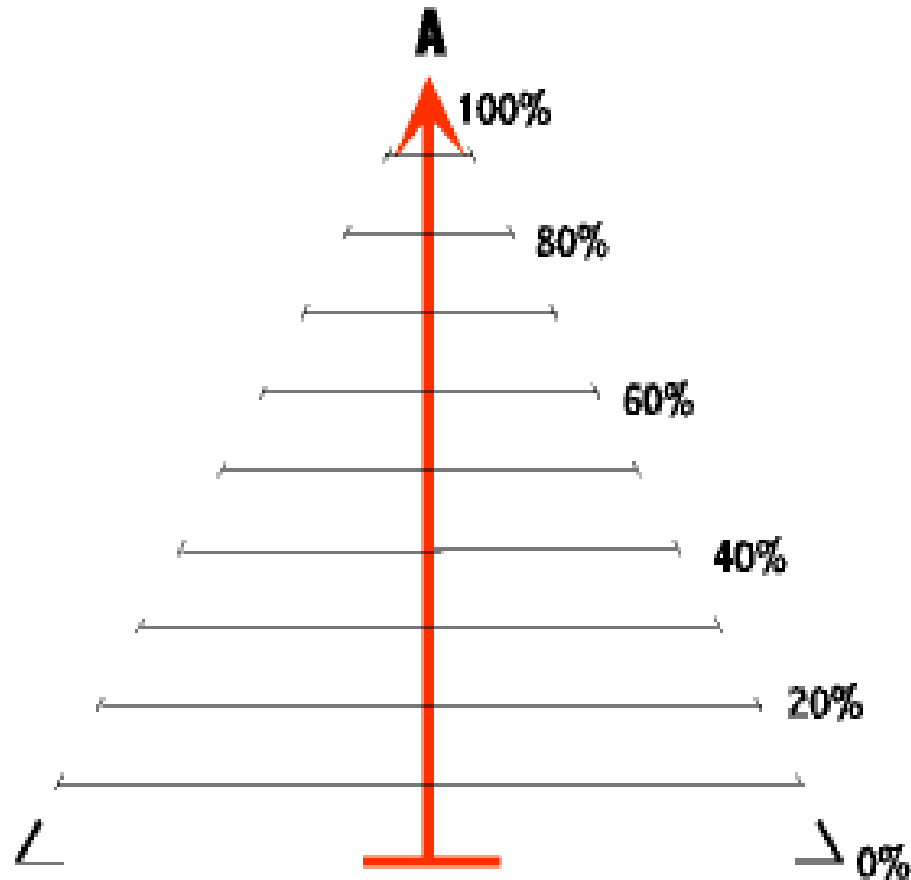
- A **Ternary Diagram** is a **triangle**, that represents the relative percentage of 3 components (sum up to 100%).
- Each of the three apices represents:
 - A composition, such as sandstone, shale, and limestone.
 - A mineral
 - A chemical element

Used to:

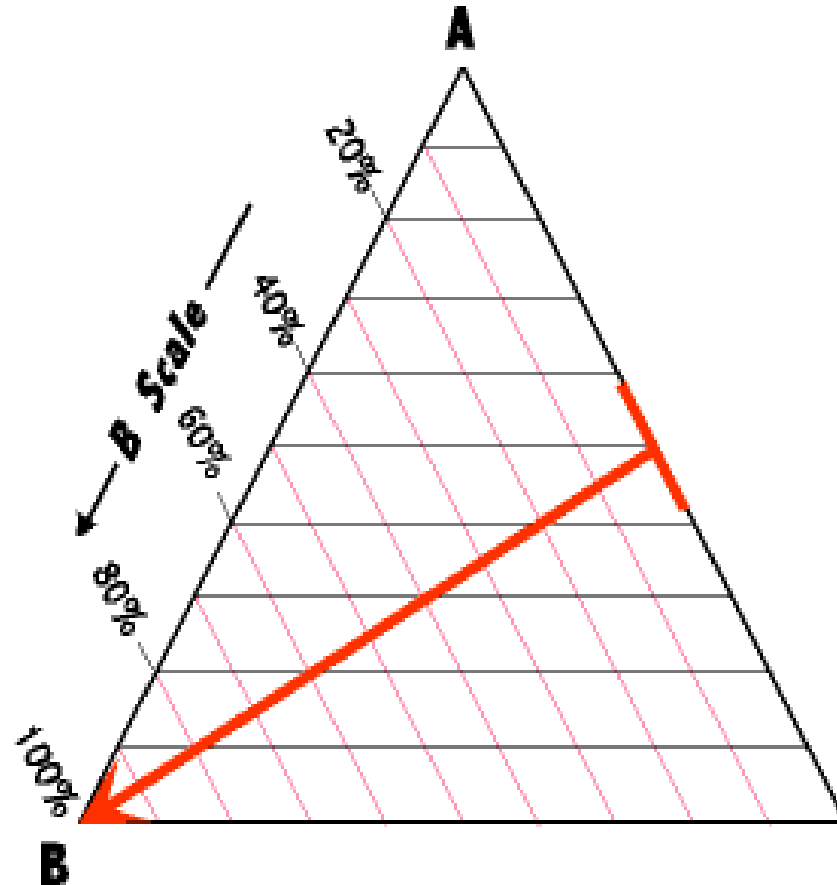
- Name rocks
- Classify rocks
 1. QFL diagrams
 2. Texture diagrams



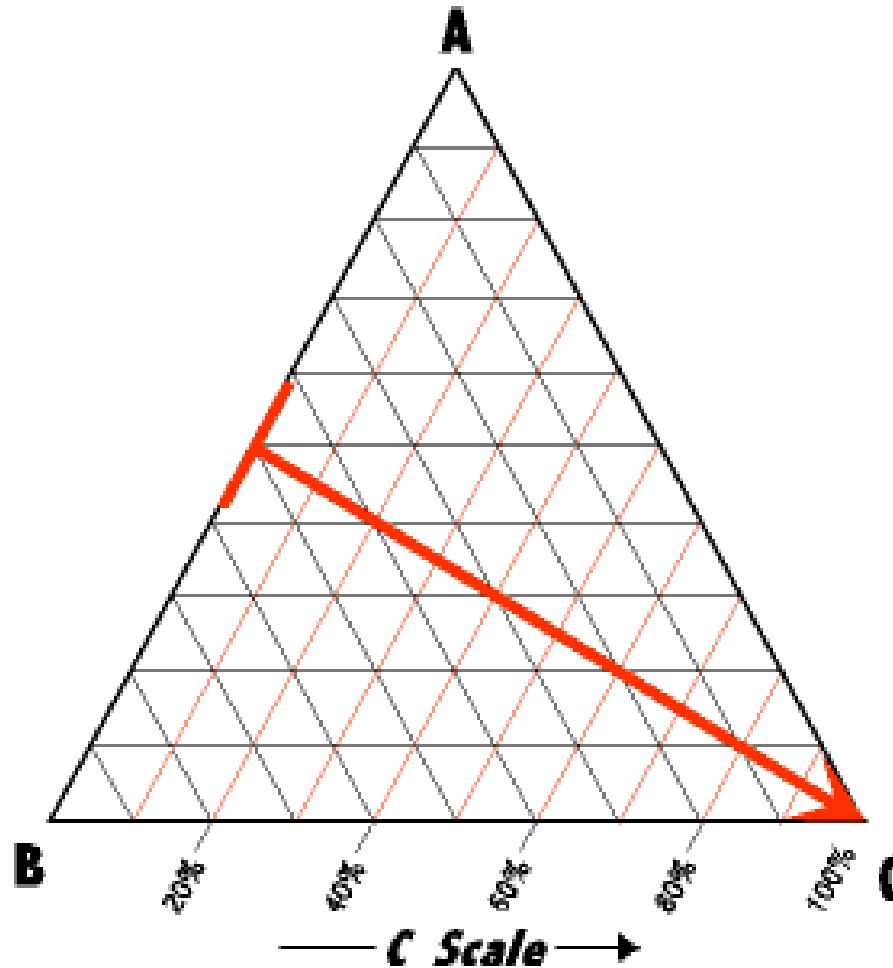
Construction of Ternary Diagram



Construction of Ternary Diagram

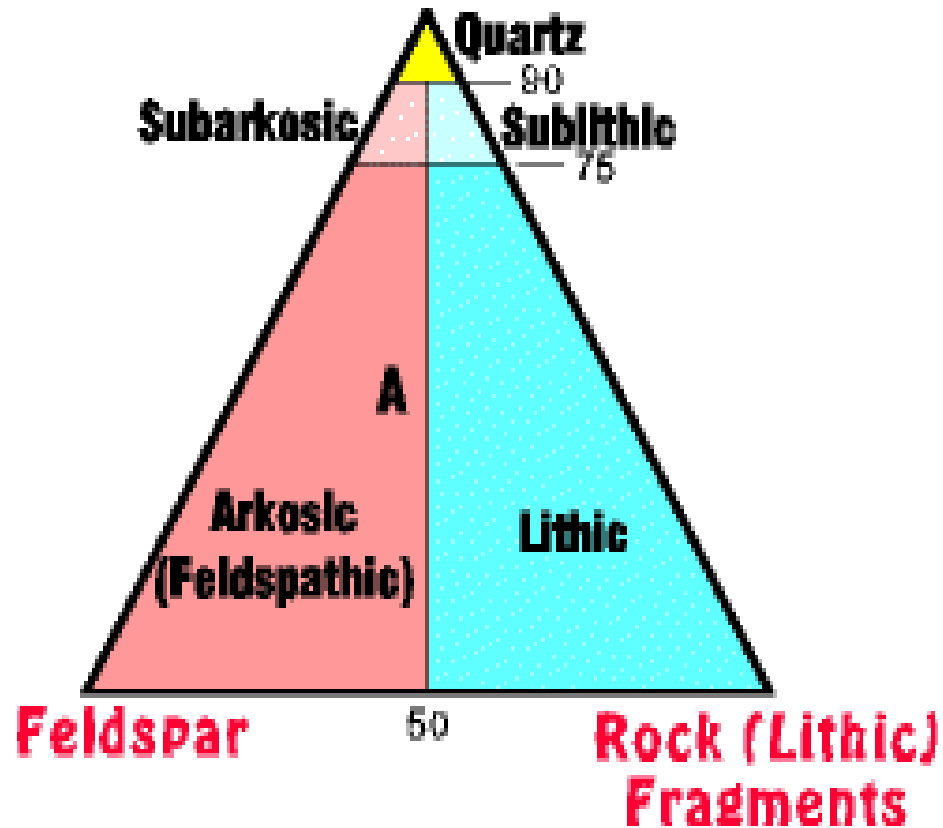


Construction of Ternary Diagram

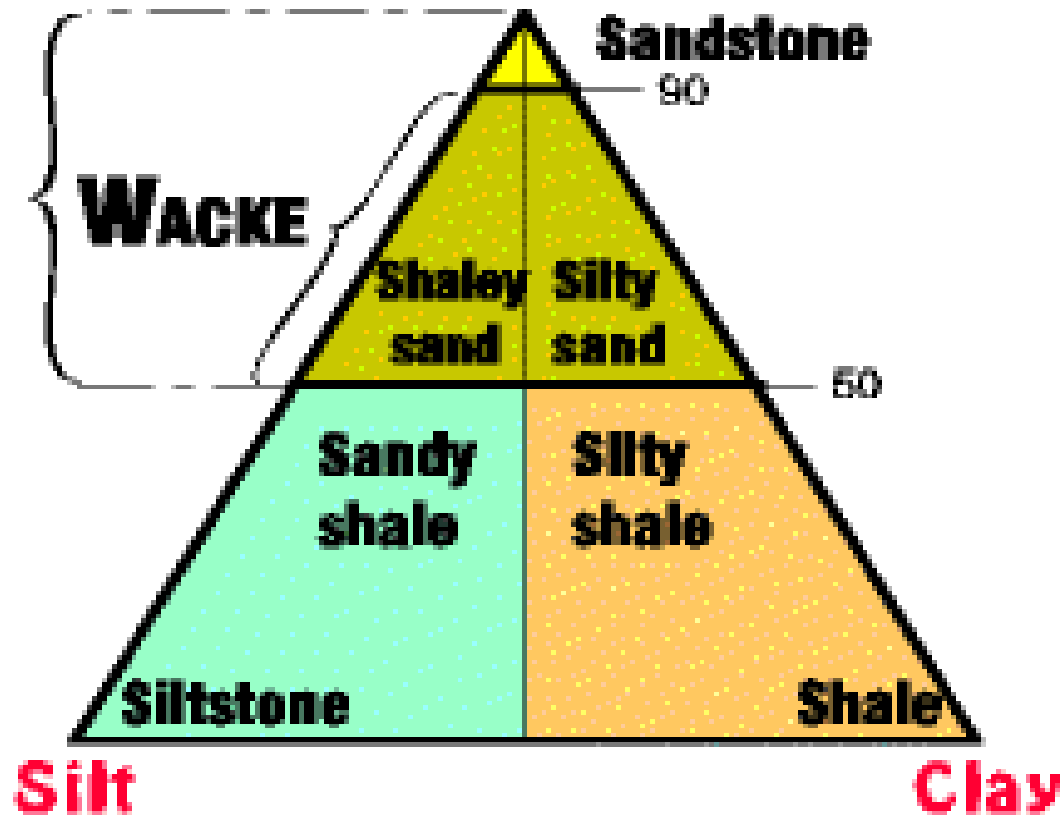


QFL Composition Diagram

Quartz

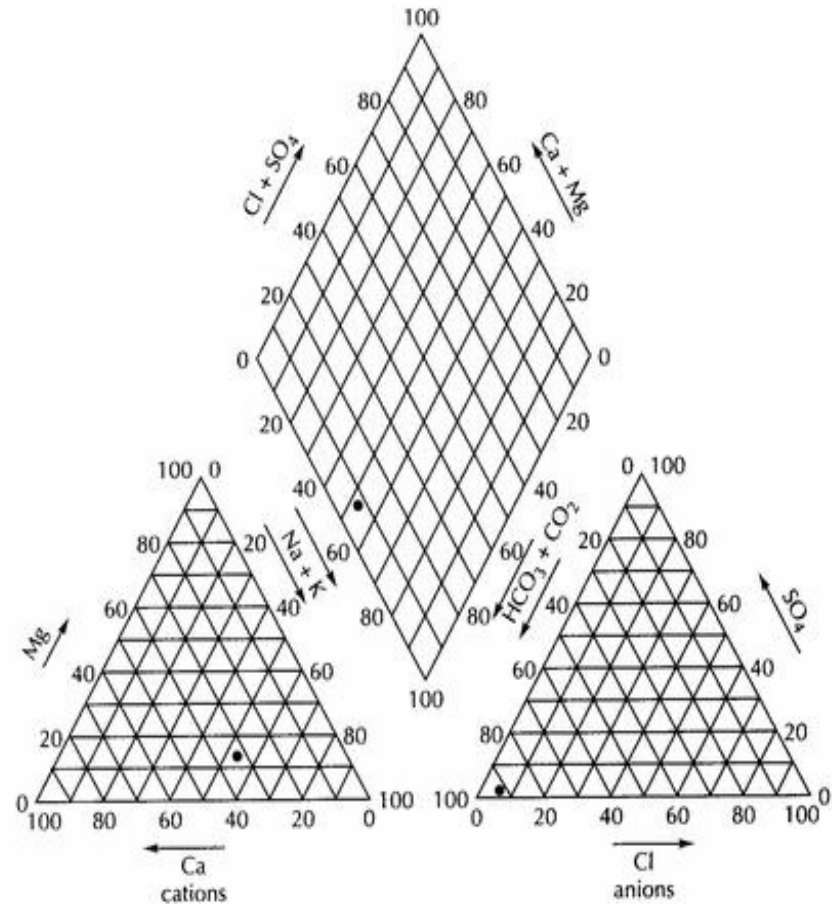


TEXTURE DIAGRAMS Sand



Piper Diagrams

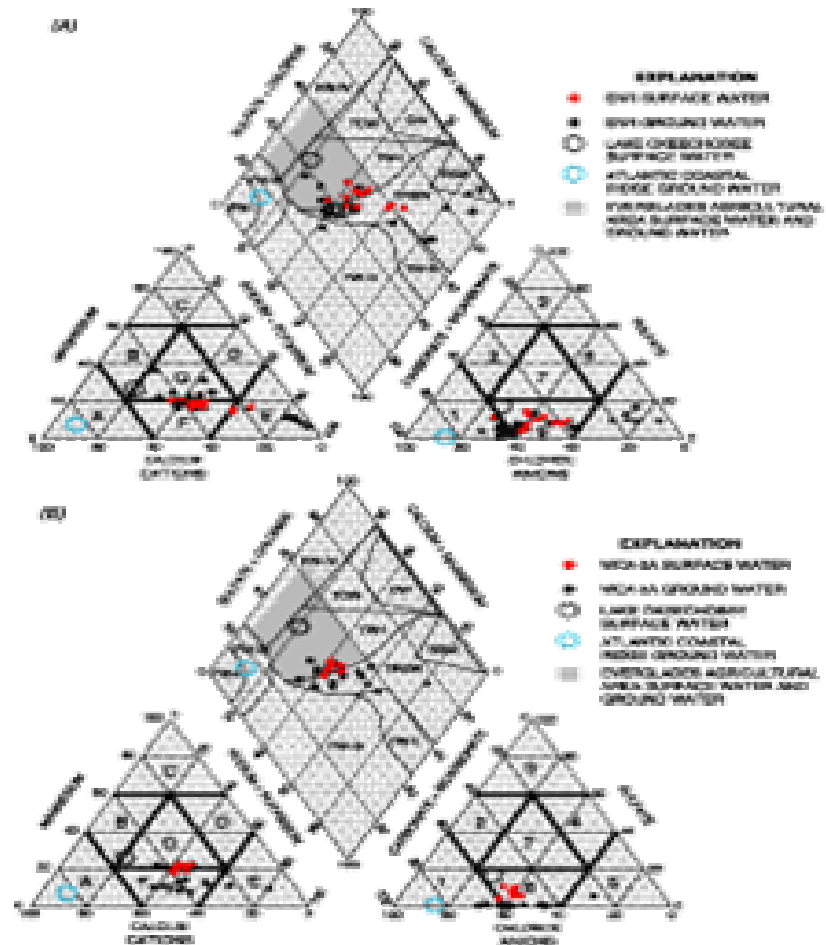
- A **Piper Diagram** is a trilinear diagram that is used in water-chemistry studies.
- The diamond-shaped field is used to represent the composition of water with respect to both cations and anions



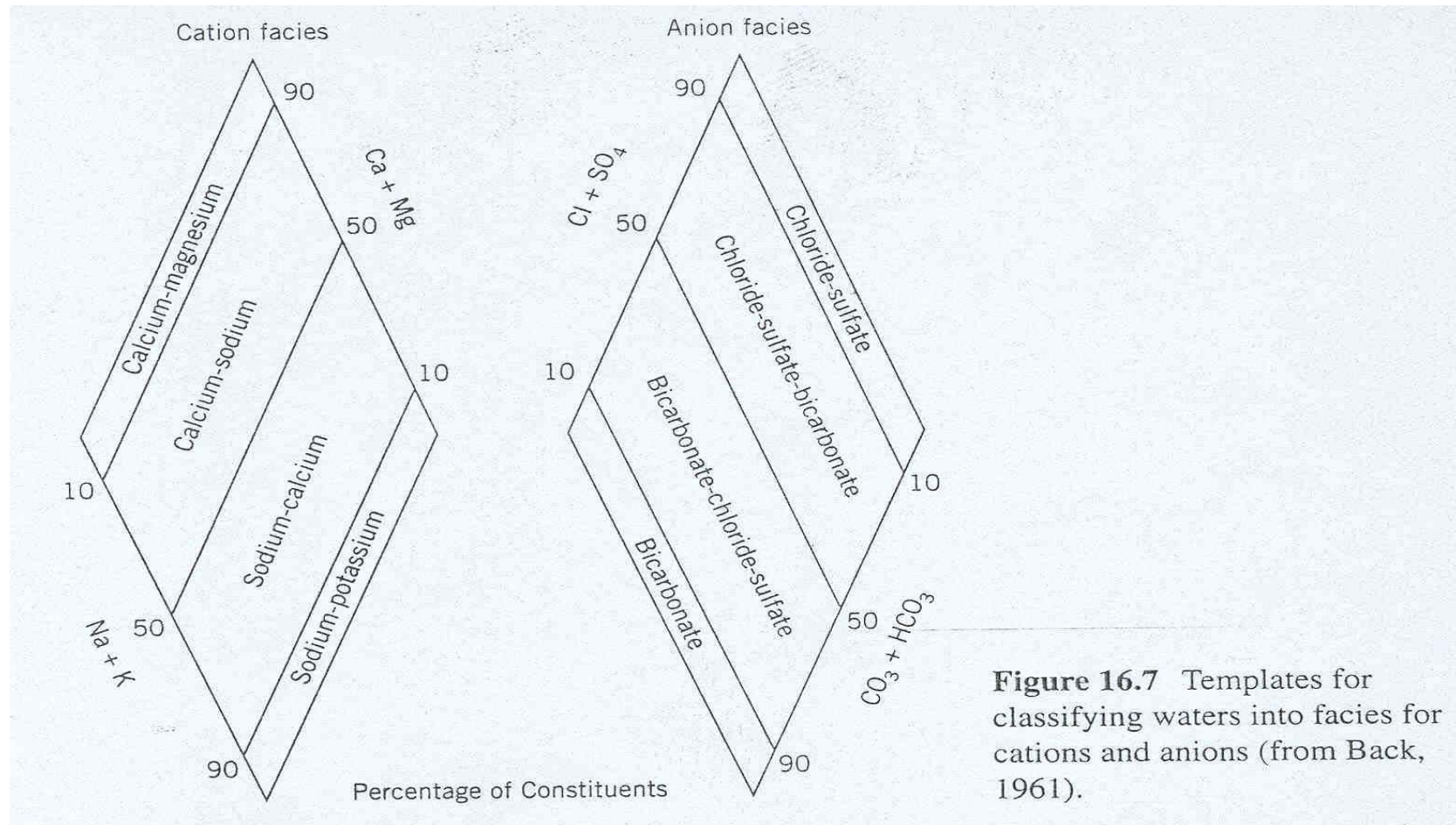
Piper Diagrams

Used to plot **Hydrochemical Facies (HF)**:

- HF are a function of aquifer lithology
- HF = f (solution kinetics)
- HF = f (flow patterns)
- HF describe groundwater chemical composition (concentration and TDS)
- HF classify groundwater types



Piper Type Diagram



Useful Links

- Ternary Diagrams

<http://www.auburn.edu/~leeming/lab1.html>

<http://www.science.ubc.ca/~geol202/ternary/ternary.html>

- Piper Diagrams

<http://www.hydrodynamics-group.com/download/Plate10.pdf>

<http://www.hydrodynamics-group.com/download/Plate13.pdf>

<http://www.auburn.edu/~leeming/lab1.html>

http://www.scisoftware.com/products/aquachem_details/aquachem_details.html

http://www.scisoftware.com/products/aquachem_details/aquachem_details.html

<http://www.ccc.govt.nz/Waste/Landfill/5%20Drawings/E%20Hydrogeology/Fig%201.10.pdf>