Assignment 4. Classification of Terrigenous Clastic Rocks

The purpose of this assignment is to provide an opportunity to classify sandstones using Dott's classification scheme. Complete the necessary calculations on the following data (i.e., calculate the "normalized" proportions of quartz, feldspar and rock fragments expressed as a percentage of their total in each sample: see pages 50 to 52 of Chapter 3 of the course notes for details of calculating and plotting the data). Plot the proportions on the appropriate ternary diagram (see pages 2 & 3 of this assignment) to determine the specific class of sandstone (i.e., note the specific name for each sample by referring to the nomenclature shown in figures 3-2 and 3-3 of Chapter 3 of the course notes).

Note that the examples, below, differ from those in the course notes in that they include proportions of "heavy minerals" and cement. When you "normalize" the data to 100% quartz, feldspar and rock fragments, the data on heavy minerals and cement are ignored.

For this assignment hand in your calculations and the ternary diagrams with points numbered to correspond to the sample on which each point is based. In addition, state the name for the rock type represented by each sample (from Figs. 3-2 and 3-3) and write a short note on the "maturity" of each of the four samples.

Sample 1.

Component	%
Quartz	11
Feldspar	5
Rock Fragments	15
Matrix	58
Heavy minerals	3
Cement	8

Sample 2.

Component	%
Quartz	11
Feldspar	18
Rock Fragments	54
Matrix	10
Heavy minerals	1
Cement	6

Sample 3.

Component	%
Quartz	73
Feldspar	5
Rock Fragments	2
Matrix	5
Heavy minerals	3
Cement	12

Sample 4.

Component	%
Quartz	6
Feldspar	31
Rock Fragments	21
Matrix	32
Heavy minerals	6
Cement	4

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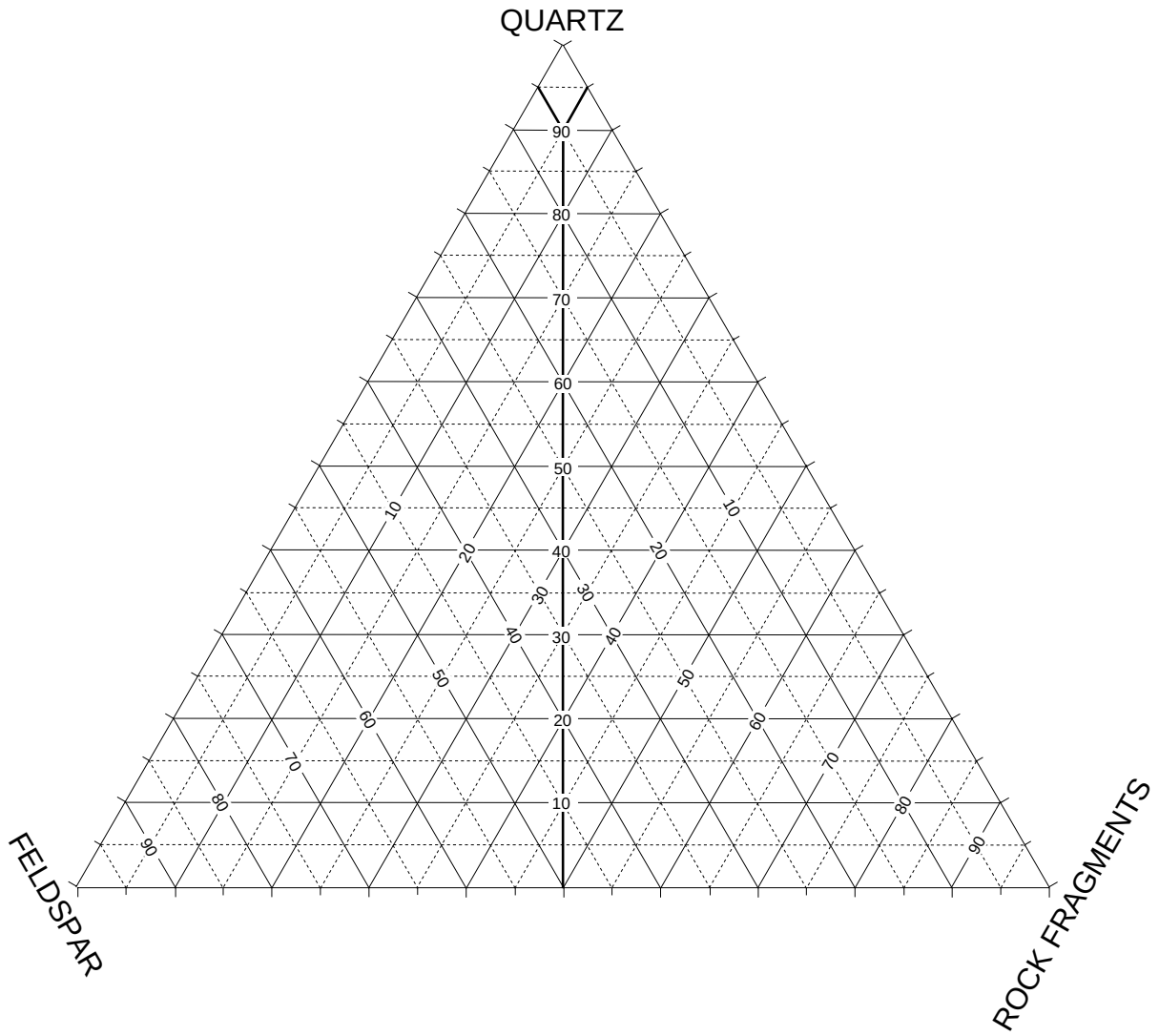

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