

# Structural Geology

## Practical 4

### Stereonet 4

[Course Homepage](#)

[Contact Staff](#)

[Lecture](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)

[Practical](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)

**STEREONETS 4 GEOLOGICAL APPLICATIONS OF STEREONETS**

**Problem 1**

Cambrian quartzites have a strike and dip of 016/23 and rest unconformably on Torridonian Arkoses which strike and dip at 225/5. What was the attitude of the Torridonian arkoses when the Cambrian quartzites were laid down?

Answer

**Problem 2**

Bedding within Cambrian quartzites is orientated 116/35, and contain foreset laminae which have a strike and dip of 185/49. What was the flow direction of the current which produced the cross-laminae?

Answer

**Problem 3**

A fault cuts Lewisian gneisses and is orientated 320/35. The fault fails to cut the overlying Torridonian arkoses whose bedding is orientated 275/25. What was the attitude of the fault prior to the deposition of the Torridonian?

Answer

**Problem 4**

The long axes of flute casts plunge towards 340° on the north-east limb of a fold having zero plunge. Asymmetry of the flute casts indicates a broadly down-dip current direction. The fold limb is orientated 315/75. What was the palaeocurrent direction?

Answer

**Problem 5**

The limbs of an anticline have the following attitudes: 230/30 and 085/65. The long axes of trough cross-stratification plunge at 20→095 on the steeply dipping limb and indicate a current direction up-dip of the present attitude of the fold limb. What was the palaeocurrent during deposition?

Answer

**Problem 6 (This was the exam question in 1993).**

The orientation of bedding within a fold is presented below in the form of strike and dip.

Locality 1	070/40
Locality 2	356/26
Locality 3	314/44
Locality 4	095/70

a) Plot the poles to bedding. What is the orientation of the fold axis?

b) At locality 1, foresets within cross-bedded sandstones have an orientation of 037/57. What was the palaeocurrent direction?

Answer