Practical work N°1.

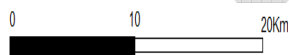# The Topographic Map

Definitions

- **A topographic map** is a representation, on a plan, of a part of the earth's surface with its shapes.

- **A contour line :** is a line that connects **points** of equal elevation. Is the location of points on the topographic surface that have the same altitude.

- **Scale**: There are two types of scale

➤ **Digital scale**: is the ratio of the length between two points on the map and the horizontally coupled length between the two corresponding points on the ground.

$$S= \frac{\text{a distance measured on the map}}{\text{the same horizontal distance on the ground}}$$

The units used in the numerator and denominator must be the same.
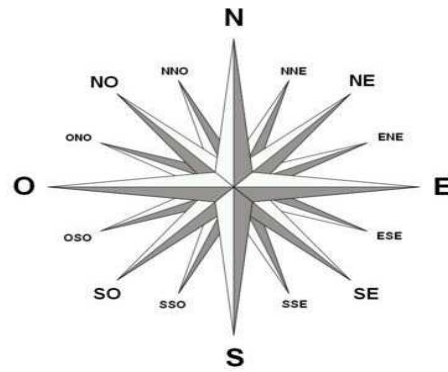
➤ **Graphic scale**

Graduated segment used as a distance standard.

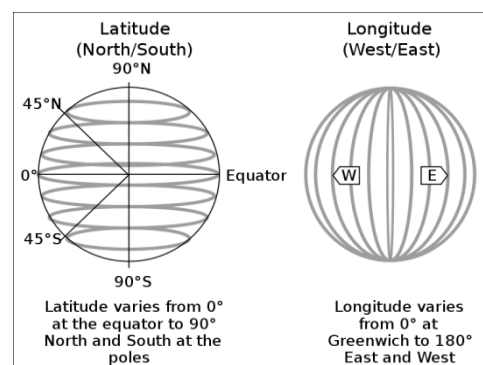
CF. Topographic map

- **Orientation**

Compass rose : A **compass rose** is a symbol on a map that shows the cardinal (Principal) directions. The cardinal directions are the main compass points—north, south, east, and west.

- **Geographical coordinates points**

The "latitude" (abbreviation: Lat., ϕ, or phi). The North Pole is 90° N (ninety); the South Pole is 90° S. The 0° parallel of latitude is designated the Equator, the fundamental plane of all geographic coordinate systems. The Equator divides the globe into Northern and Southern Hemispheres.

The "longitude" (abbreviation: Long., λ, or lambda). The antipodal meridian of Greenwich is both 180°W and 180°E
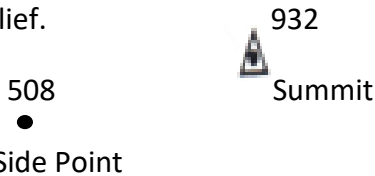

The combination of these two components specifies the position of any location on the surface of Earth, without consideration of altitude or depth.

UTM : Universal Transvers Mercator, the most widely used. (Measured by GPS**).
GPS :** Global Positioning System.

- **Relief representation**

Measured points at important points (summits, villages, etc.). Combined with hydrography, they give a vague idea of the relief.

932

508
●
Side Point

Summit

CF. Topographic map

  - **Reading a topographic map**

***Upper margin* :**
1: Name of the   sheet (map)
2: Numerical scale
3: Card number in the assembly table
***Lower margin* :**
4: Graphic scale
5: Year of issue and projection system
6: Equidistance value
7: Legend
***Right margin* :**
8: The 3 Norths
9: Diagram of administrative boundaries
10: Network of geographical coordinates (meridians and parallels) and Lambert grid
+: Name of neighbouring map
The legend: This is an explanatory code of conventional signs used to represent the objects shown on the map. The objects described in the legend are classified by theme (habitat, road network, vegetation, etc.).

  - **Indications given by the colours :**
Blue: water, hydrography: sea, rivers, springs and wells, etc.

Green: natural or cultivated vegetation: forests
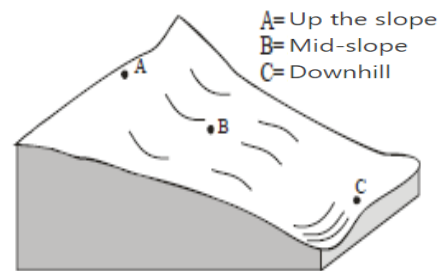Dark: contour lines
Black: human settlement.
Toponymy = place names and their administrative status.

- **The basic shapes of relief**
a slope it is an inclined surface dominating the thalweg of a valley. The shapes of the hillslopes are determined by variations in slope.
It is the fundamental element of the relief (mountain, plain, plateau, etc.). The slope is made up of a sloping surface whose inclination is variable.

CF. Topographic map

The hillside slope of a surface is the value, expressed in degrees, of the angle that this surface makes with a horizontal plane (Aubouin, 1970).
The slope of a hillside is characterised by :
its value (° or %): the contours are marked, so the % of a slope can be estimated from a measurement on the contour map.
A slope is said to be :
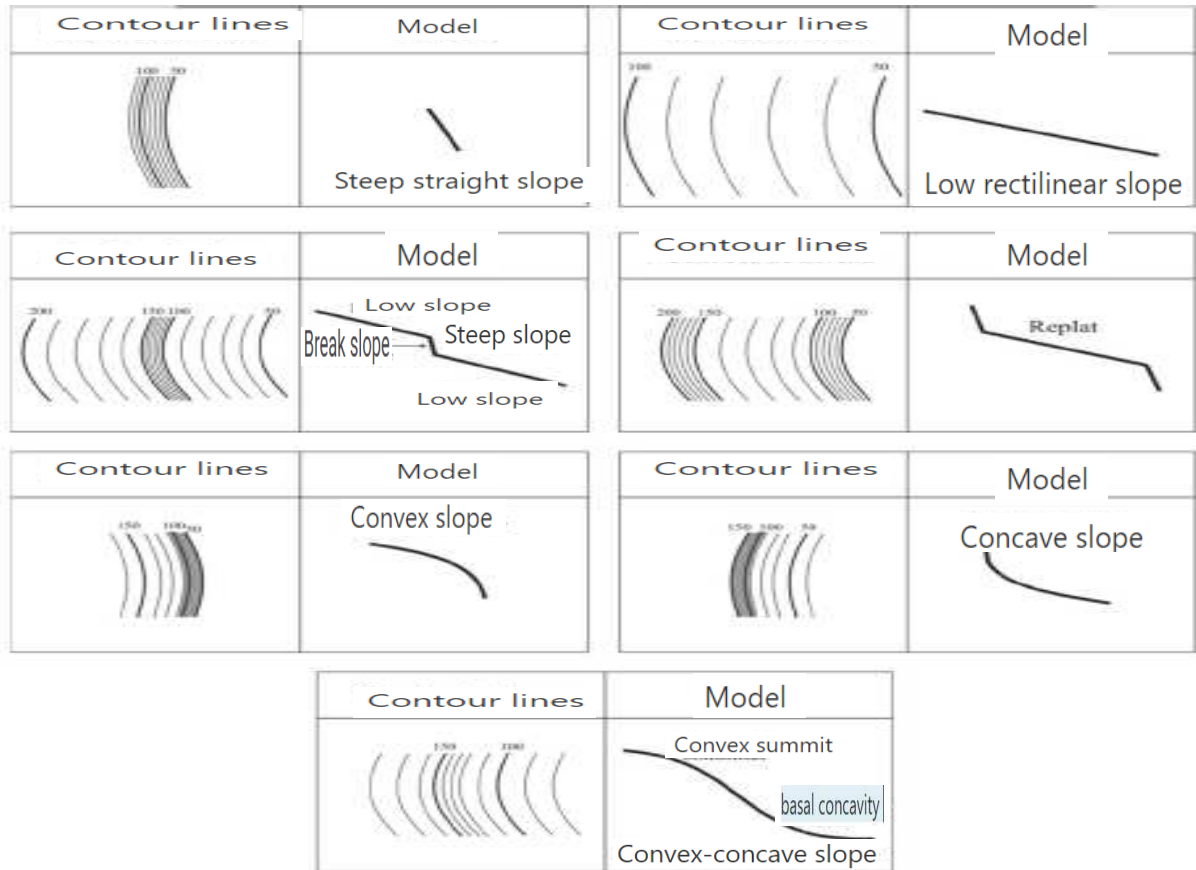Insensitive when the angle it forms is between 0 and 3° (i.e. 5%)
Slight when the angle it forms is between 3 and 10° (18%)
Medium when the angle it forms is between 10 and 27° (51%)
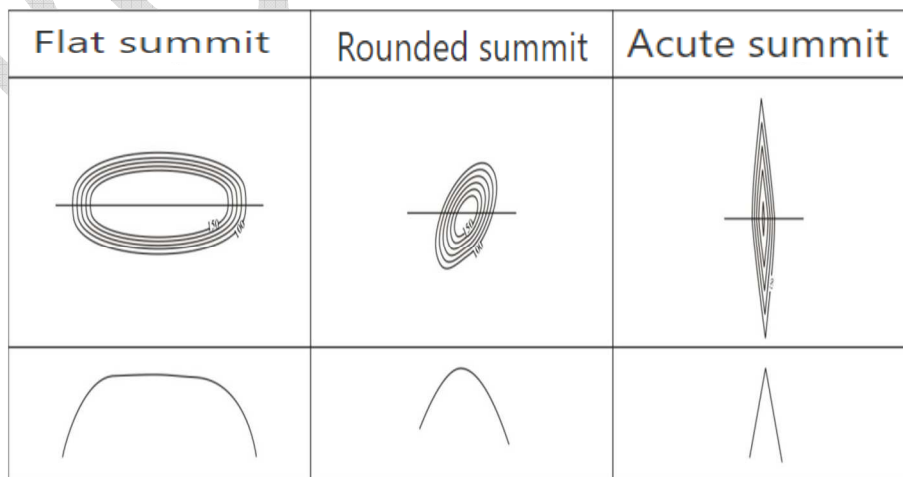 Strong when the angle it forms is between 27 and 35-40° (70-83%)
 Very steep when the angle it forms is between 35-40° and 90° (+85%)

The slope is said to <u>overhang</u> wh Steep straight slope greater than 90° (+95%)
and its shape, which can be concave, convex, straight or convexo-concave. Consequently,
there are two types of shape: simple shapes and composite shapes.

Contour lines	Model	Contour lines	Model
	Steep straight slope		Low rectilinear slope

Contour lines	Model	Contour lines	Model
	Low slope / Break slope → Steep slope / Low slope		Replat

Contour lines	Model	Contour lines	Model
	Convex slope		Concave slope

Contour lines	Model
	Convex summit / basal concavity / Convex-concave slope

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A summit: the highest point of a relief.

Flat summit	Rounded summit	Acute summit

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