











# Carte du tectonique des alpes

## European Continent

### Helvetic nappes and Northern Alpine Foreland

|   |                          |  |
|---|--------------------------|--|
|  | <b>European basement</b> | Variscan basement of the Alpine foreland ( <i>Vosges, Black Forest, Bohemian Massif</i> ), unaffected or only weakly deformed by Alpine orogeny. |
|  | <b>Mesozoic cover</b>    | undeformed or only very weakly deformed Permo-Mesozoic cover of the Alpine foreland  |
|  | <b>Subalpine molasse</b> | strongly deformed parts of the Molasse basin   |
|  | <b>Deformed Mesozoic</b> | Parautochthonous and autochthonous Mesozoic cover of the External Massifs; detached Mesozoic cover (e.g. <i>Dauphinois, Jura Mountains</i> )     |
|  | <b>Helvetic nappes</b>   | allochthonous cover nappes (including <i>Ultra-Helvetic nappes</i> ) and rare basement slices (e.g. <i>Combeynot and Tavetsch "massifs"</i> )    |
|  | <b>Helvetic flysch</b>   | allochthonous or parautochthonous flysch units detached from the external massifs and their Mesozoic cover                                       |
|  | <b>External Massifs</b>  | basement highs of the northern Alpine foreland exposing Variscan basement only weakly affected by Alpine metamorphism                            |




### Metamorphic nappes derived from the distal European margin

|   |                            |  |
|---|----------------------------|--|
|  | <b>Metamorphic cover</b>   | Alpine metamorphic Permo-Mesozoic cover of former Variscan basement  |
|  | <b>Pre-alpine basement</b> | pre-Permian basement reworked by Alpine metamorphism and forming Alpine basement nappes (e.g. <i>Gotthard "massif", Lepontine dome, Zentralgneiss of the Tauern window</i> ) |
|  | <b>Eclogitic units</b>     | slices of the distal European margin affected by eclogite facies metamorphism (e.g. <i>Adula "nappe", Eclogite Zone of Tauern window</i> )                                   |







## Alpine Tethys

### Valais Ocean and related rocks

(north of Briançonnais-Iberia-microcontinent)



|   |                         |   |
|---|-------------------------|---|
|  | <b>Cheval Noir</b>      | Cenozoic flysch sealing an accretionary prism ( <i>Cheval Noir Flysch</i> )   |
|  | <b>Sub-Briançonnais</b> | Mesozoic (Trias to Cretaceous) continental margin sediments, occurring pinched between the Briançonnais domain and the European continent                           |
|  | <b>Valais Ocean</b>     | slices derived from Valais Ocean ophiolites and from the ocean-continent transition zone; mostly Bündnerschiefer (schistes lustrés) and prasinites, rare ophiolites |

### Briançonnais-Iberia microcontinent

|   |                           |   |
|---|---------------------------|---|
|  | <b>Cover nappes</b>       | detached Mesozoic cover of the Briançonnais paleogeographic domain  |
|  | <b>Zone Houillère</b>     | inverted and detached larger Permo-Carboniferous troughs ( <i>Zone Houillère</i> ) and volcanics rocks including their Mesozoic cover |
|  | <b>Briançonnais cover</b> | Mono-metamorphic Permo-Carboniferous and Mesozoic cover of the Briançonnais basement nappes   |
|  | <b>Distal cover</b>       | Mono-metamorphic cover of the Briançonnais distal margin (e.g. <i>Pre-Piemontais, Barhorn serie</i> )                                 |
|  | <b>Basement nappes</b>    | Variscan basement nappes and post-variscan magmatic intrusions, affected by Alpine HP metamorphism                                    |
|  | <b>Variscan basement</b>  | Variscan basement unaffected by Alpine metamorphism ( <i>Corsica</i> )  |

### Piemont-Liguria Ocean

(south of Briançonnais-Iberia-microcontinent)

|   |                       |   |
|---|-----------------------|---|
|    | <b>Western branch</b> | ophiolites, Bündnerschiefer (schistes lustrés) & ophiolitic mélange involved in Alpine orogeny and forming the lower plate and/or the accretionary prism during Alpine orogeny  |
|  | <b>Eastern branch</b> | ophiolitic olistostrome and mélange and overlying sedimentary cover including flysch forming the upper plate during Alpine orogeny, often involved in Apenninic orogeny only ( <i>External Ligurides of Apennines</i> ) |