



Geochemical characteristics of glauconites as indicators of depositional environment. Examples from the Vocontian basin.

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A sedimentological and stratigraphical analysis has been applied to the Early Cretaceous glaucony-rich deposits of the southeastern margin of the Vocontian Basin. Thin sections, X-ray diffraction on random powders analyses, and data from geochemical analyses, performed on pure disaggregated glauconite grains by wavelength dispersion spectroscopy (WDS), allow the distinction of two populations of highly evolved glauconite grains. The first population is interpreted to be autochthonous (Amorosi, 1997)(i.e. grains that have not experienced any transport from their place of origin). The second is interpreted to be parautochthonous (i.e. grains that have been removed from their place of origin and concentrated landward and seaward within nearly coeval deposits). Palaeoenvironmental information has been deduced mainly from (1) the characteristics of glauconitic grains, (2) meso- and microscopic analyses performed on the named lithozones, and (3) their lateral changes on a kilometre scale.

These data allow to reconstruct the paleogeography (Pasquini et al., 2004) that implies a southern area belonging to an outer platform and a northern zone with the characteristics of a distal ramp (Hauterivian). This depositional setting changed during the Barremian–Aptian owing to tectonics; fault systems led to a drowning of the western segment, but the previous environmental pattern presented again during Albian–Early Cenomanian times. Geochemicals analyses performed on glauconites of two different sections, a proximal one (S. Laurent de l’Escarène) and a more distal one (Col Vescavo) bear out this attribution according to Kazakov’s model (1982, 1983).

Autochthonous glauconites show at the Escarène zone Al_2O_3 and SiO_2 values lower than equivalent levels at the Col Vescavo zone whereas Fe_2O_3 values are higher.

Parautochthonous glauconites have for the same parameters very similar values that do not allowed to make this distinction.

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