



## **First dinoflagellate cyst data from the Upper Cretaceous Col de Braus section (Vocontian Basin, SE France) highlighted with CLSM**

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The studied Col de Braus section is situated north of Nice, in the Southern Subalpine Ranges in the Maritime Alps. During the Late Cretaceous this area was part of the Vocontian Basin, a peripheral basin of the northwestern Tethys Ocean. The southwestern slope of the Col de Braus exposes a 430 metre thick Upper Cretaceous sediment succession, and is regarded as the most complete Upper Cretaceous section of the distal part of the Vocontian Basin. The stratigraphic interval studied in detail comprises the uppermost Albian to Santonian. All palynological samples yielded excellent preserved dinoflagellate cysts. Therefore, a selection of specimens is presented by 3D images generated with CLSM. In CLSM a fine laser beam is directed on the study object, and the obtained signal, either fluorescence or reflected light, is measured by a photo-multiplier detector and displayed on a monitor. By scanning a sample in closely spaced, very thin serial sections, views of single optical planes are generated and electronically stored as an image stack. In subsequent steps of data processing through a computer the acquired image stack can be recombined into a single image of the study object exhibiting a very high depth of focus. These data are used to generate three-dimensional reconstructions of the study object that can be rotated and cut, illuminated from different angles to enhance surface details, and converted to a stereoscopic image, a red-green anaglyph. 3D images allow an easy and quick understanding of the complex structures of the study objects, which is often not possible in conventional light microscopy. Using the normal, Eukitt or glycerine jelly mounted slides is another big advantage of CLSM compared to other standard microscopy methods such as SEM. Because of the excellent preservation of the palynomorph assemblage, a di-

noflagellate cyst biostratigraphical zonation of the Col de Braus section is underway. This zonation provides a reference for the Upper Cretaceous biostratigraphy of the Vocontian Basin.