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# Palynology, biostratigraphy and paleoceanography of the Plio-Pleistocene at ODP Site 887, Gulf of Alaska

Coralie Zorzi<sup>\*1,2</sup>, Jens Matthiessen<sup>3</sup>, and Anne De Vernal<sup>4</sup>

<sup>1</sup>EPOC – CNRS : UMR5805, Université de Bordeaux (Bordeaux, France) – Pessac, France

<sup>2</sup>École pratique des hautes études – PSL Research University – Paris, France

<sup>3</sup>AWI, Helmholtz Centre for Polar and Marine Research – Bremerhaven, Allemagne

<sup>4</sup>GEOTOP-UQAM – CP 8888 Montreal (Qc) H3C 3P8, Canada

## Résumé

Analyses of marine palynomorphs, including dinocysts and acritarchs in Pliocene-Pleistocene sediments of the Ocean Drilling Program (ODP) Site 887 in the Gulf of Alaska led to define a biostratigraphical scheme, which we compare to bio-events in the regional diatom and radiolarian zonations. The dinocyst biostratigraphical scheme includes five biozones and four major boundaries. A first stratigraphical limit at 4.4 Ma is associated with a change in productivity, and the other limits at 2.7 Ma and 1.7 Ma and at 0.7 Ma, would respectively correspond to onset of the modern halocline, a cooling intensification and the end of the Mid-Pleistocene transition. Moreover, the analyses of dinocyst assemblages illustrate long term changes in the surface ocean after 5.3 Ma. The occurrence of *Ataxiodinium zevenboomii*, *Impagidinium velorum* and *Impagidinium patulum* suggests warm temperate conditions until about 4.2 Ma. Between 4.2 and 2.7 Ma colder/fresher events marked by an increase of cold-affinity species as *Habibacysta tectata* suggest regional cooling and/or freshening of surface water, which might be related to Alaskan glacier meltwater discharges. From 2.7 to 1.2 Ma, the presence of *Impagidinium pallidum* and cyst of *Pentapharsodinium dalei* suggests fresh, cold and stratified surface waters whereas major drops in fluxes are linked to decrease in productivity and the onset of harsh conditions. Progressive change from cold-stratified waters to warmer and saltier conditions is suggested to occur from dinocyst assemblages between 1.2 and 0.7 Ma during the mid-Pleistocene Transition. After 0.7 Ma, the dinocyst assemblages are characterized by the alternating dominance of *Brigantedinium* spp. and *Operculodinium centrocarpum*, thus suggesting fluctuations between nutrient-rich, low saline and cold waters and cool temperate environments.

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\*Intervenant