

{rokbox title=|Imagen de un dinoflagelado al microscopio de epifluorescencia :: Image: Catalina Mena (COB-IEO)|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-distribucion-picoplancton-frente-halino-balear-mena-et-al-2016-thumb.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-distribucion-picoplancton-frente-halino-balear-mena-et-al-2016.jpg|/rokbox}

Catalina Mena, Patricia Reglero, Pere Ferriol, Asvin P. Torres, Alberto Aparicio-González,

Rosa Balbín

Rocío Santiago

, Gabriel Moyà,

Francisco Alemany

, Nona S. R. Agawin, 2016.

[**Prokaryotic picoplankton spatial distribution during summer in a haline front in the Balearic Sea, Western Mediterranean**](#)

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Abstract: In oligotrophic regions, picophytoplankton can play a key role in total carbon production and energy transfer. Since the mesoscale hydrographic variability can influence the resource availability and therefore the biological communities, here we studied the linkage between hydrography, resource supply, abundance, and biomass contribution of prokaryotic picoplankton in the south Balearic Sea during the stratified season. The sampling area covered the confluence of two different water masses, the fresher new Atlantic water, and the saltier resident Atlantic water. Our results showed higher *Synechococcus* abundances in the more oligotrophic new Atlantic water mass and suggest that the spatial patterns of prokaryotic picophytoplankton are dictated by the mesoscale processes in this region. The summer stratification condition separated clearly the surface mixed layer (ML) from the deep layer (DL); our results support different limiting factors for picophytoplankton in the two layers: nutrient and light availability in the ML and DL, respectively. We also obtained no significant difference in the *Synechococcus* biomass contribution to total autotrophic biomass within the water column, but higher contribution in the new Atlantic water mass. These results demonstrate the general importance of picophytoplankton as carbon producers in oligotrophic waters and particularly their variability as biomass source at the mesoscale.

Keywords: Picoplankton, *Synechococcus* sp., *Prochlorococcus* sp., Western Mediterranean

Sea, Mesoscale hydrography