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Agregate fluxes in the benthic boundary layer of Cap de Creus Canyon

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This paper evaluates the role of large particles for the transport of organic matter within the benthic boundary layer (BBL) of the Cap de Creus submarine canyon.

It reveals that horizontal, advective fluxes of particulate matter exceed the vertically sinking fluxes through the water column. Water and sediment samples were taken during two cruises to the Gulf of Lions. The sediments in the canyon consisted of an aggregated surface layer, which covered the underlying sediments. At all stations, surface erosion yielded BBL aggregates of 50 –1000 μm at critical friction velocities of 0.7-1.3 cms-1 with settling velocities of 0.05 – 0.6 cms-1 respectively. A model run on aggregate transport using the 3D hydrodynamic model Symphonie is used to discuss fluxes of large aggregates in this canyon system during storm events.