{rokbox title=|Mictófidos :: Image: COB-IEO| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-jms-trophic-structure-mesopelagic-fishes-ideados-valls-et-al-2014-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-jms-trophic-structure-mesopelagic-fishes-ideados-valls-et-al-2014.jpg{/rokbox}

M. Valls, M.P. Olivar, **M.L. Fernández de Puelles**, B. Molí, A. Bernal, C.J. Sweeting, 2014. **Trophic structure of mesopelagic fishes in the western Mediterranean based on stable isotopes of carbon and nitrogen**
. Journal of Marine Systems. Volume 138, October 2014, Pages 160–170.

Abstract: Mesopelagic fishes play an important role in the transfer of organic material in the photic zone to depth although the trophodynamic partitioning amongst co-existing and presumably competing species is unclear. This study employs combined carbon and nitrogen stable isotope analyses (δ13C and δ15N) of the 18 most abundant western Mediterranean mesopelagic fishes to explore niche partitioning in this group. Sampling was conducted along the water column from the shelf and slope grounds of the Balearic Islands in two contrasting periods (late autumn and summer). Trophodynamics were explored at assemblage level and at inter- and intra-species resolutions respectively using Bayesian diet mixing models and size specific behaviour respectively. Seasonal δ13C differences in near basal particulate organic matter (POM) and zooplankton fractions were almost directly replicated in higher fauna suggesting strong isotopic coupling between mesopelagic fishes and planktonic production. Despite reliance on similar basal production, species were segregated by trophic position with a graduation from 2.9 for the small Gonostomatidae *Cyclothone braueri* to 4.0 for the Myctophidae *Lobianchia dofleini*. Mixing model data reflected basic trophic position estimates with higher contributions of small fish and zooplankton/POM in higher and lower trophic level species respectively. Species could be categorized as showing preference for i) mesozooplankton/POM as for *C. braueri*, (in the lower TrL), ii) euphausiids and fish prey as for *L. dofleini* and the near bottom *Lampanyctus crocodilus* (in the upper TrL) and iii) mesozooplankton/euphausiids as *Ceratoscopelus maderensis*, *Lampanyctus pusillus* or the migrating *L. crocodilus*

. There was little evidence of size based inter-population trophodynamics, with size-isotope trends explained by co-varying lipid content.

Keywords: Food web, Niche segregation, Myctophidae, Gonostomatidae, Sternoptychidae