Fish larvae distribution off Mejillones Peninsula (northern Chile) during a coastal upwelling event in Spring 1999: Interactions with the cold upwelling plume

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We examined the interaction between vertical and horizontal distribution of fish larvae off Mejillones Peninsula (23°S), northern Chile, under conditions of active coastal upwelling. An oceanographic survey covered spatial variability in temperature, chlorophyll-a (chl a), dissolved oxygen, salinity and water density. Fish larvae were sampled during daytime and nighttime periods through two consecutive days in four stations: two inside and two outside of a well-developed upwelling plume, and at three depth strata: 0-20, 20-80 and 80-200 m. Eighteen taxa were analysed, of which the Myctophidae Diogenychthys atlanticus, Diogenichthys laternatus, and the anchovy Engraulis ringens, were most abundant. Our data showed little evidence for diel vertical migration and larvae were more abundant at depth (>80 m) under low temperature (?12°C) and low chi a (?2 mg m-3), below the highly advective upper layer. The exploratory K-means analysis allowed the separation of data into two distinct habitat