E值, 定量分析其集群行为变化规律。结果表明: 闽南-台湾浅滩二长棘鲷全年月平均Ε为7.4409×10<sup>8</sup>J, 生殖期间12月到翌年3月, 其月平均Ε 2.4949×10<sup>8</sup>J, 是全年月平均Ε的 0.34倍, 鱼群集中; 4-5月, 幼鱼大量出现, 月平均E为4.556×10<sup>8</sup>J, 是全年月平均 的0.61倍, 鱼群相对集中; 主要索饵季节6-8月, 月平均E为1.3448×10<sup>9</sup>J, 是全年月平均 的 1.81倍,鱼群分散;9-11月,E分别为1.435×10<sup>9</sup>、9.7409×10<sup>8</sup>、5.769×10<sup>8</sup>J,分别是全年月平均的1.93、1.31、0.78倍,鱼群为适应水温和寻找产卵场,在外移过程中逐渐集中。可见,闽南-台湾浅滩二长棘鲷的生殖群体集群性最强,其次是幼鱼群体、以适应水温和寻找产卵场为目的的群体,而索饵群体分散。

"/> E value in each month of P. edita population was calculated, which used to quantificationally analyse the variation rule of schooling behavior. The results showed that the annual monthly average  $\overline{E}$  of P. edita population in Minnan-Taiwan bank fishing ground is 7.4409 $\times$ 10 $^8$ J, in the reproduction period which from December to March of the next year, the average monthly  $\overline{E}$  is 2.4949imes10 $^8$ J, which was 0.34 times of the annual average, that meant the fish concentrated; young appeared in large numbers from April to May, and the average monthly  $\overline{E}$  was 4.556imes10 $^8$ J, which was 0.61 times of the annual average, the fish relatively concentrated; in feeding migratory months from June to August, the average monthly  $\overline{E}$  was 1.3448 $\times$  $10^9$ J, which was 1.81 times of the annual average, the fish dispersed;  $\overline{E}$  was 1.435 $\times$ 10 $^9$ , 9.7409 $\times$ 10 $^8$ , 5.769 $\times$ 10 $^8$ J from September to November respectively, which was 1.93, 1.31 and 0.78 times of the annual average  $\vec{E}_i$  in the transfer process, the fish population gradually concentrated in order to adapt to water temperature and look for spawning grounds. So schooling behavior of the reproductive population of P. edita in Minnan-Taiwan bank fishing ground was the strongest, followed by a young group and the group which need adapt to the water temperature and search for spawning grounds, while the feeding group disperse.

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## 闽南-台湾浅滩渔场二长棘鲷群体集群行为宏观量化与分析

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Macro-level quantification and analysis of schooling behavior of Parargyrops edita Tanaka in Minnan-Taiwar Bank Fishing Ground

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摘要

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