

研究论文

## 中华哲水蚤卵密度及其沉降速率

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**摘要** 中华哲水蚤是中国全球海洋生态系统动力学 (China-GLOBEC) 研究中的关键次级生产者, 是浮游植物与高营养级生物之间的中间纽带。为了阐明中华哲水蚤的卵沉降动力学, 采用密度梯度离心法研究了中华哲水蚤的卵密度, 研究结果表明: 在厦门湾中华哲水蚤平均卵密度为 $1.0733 \text{ g cm}^{-3}$ 。按照斯托克斯定律, 中华哲水蚤卵的沉降速率为 $43.9\sim 67.5 \text{ m d}^{-1}$ 。对中华哲水蚤卵沉降时间与孵化时间的比较表明, 在厦门湾中华哲水蚤卵能够在孵化之前就沉降到海底。并对中华哲水蚤卵快速沉降的生态学意义展开了讨论。

**关键词** [密度](#); [沉降速率](#); [卵](#); [中华哲水蚤](#)

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## Egg density and sinking rate of a planktonic copepod *Calanus sinicus* (Copepoda: Calanoida)

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**Abstract** *Calanus sinicus* is regarded as one of the key secondary producers, linking phytoplankton and higher trophic levels, in the China-GLOBEC Project. The density and sinking rate of *Calanus sinicus* eggs were studied in order to understand the depositional dynamics of eggs. The egg density of *C. sinicus* was determined by the density-gradient centrifugation with sucrose solution. The mean density of *C. sinicus* eggs was  $1.0733 \text{ g cm}^{-3}$  with a SD of  $0.0087 \text{ g cm}^{-3}$  in Xiamen Bay from December 2002 to May 2003. Based on Stokes' Law, the values of sinking rate for *Calanus sinicus* eggs were estimated, ranging from  $43.9$  to  $67.5 \text{ m d}^{-1}$ . The comparison of the egg deposition time and egg hatching time suggested that in most cases virtually all eggs of *C. sinicus* would settle to the bottom before their hatching in Xiamen Bay even though the eggs have high potential to hatch. The ecological significance of fast settlement of *C. sinicus* eggs was discussed.

**Key words** [density](#) \_ [sinking rate](#) \_ [egg](#) \_ [Calanus sinicus](#)

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