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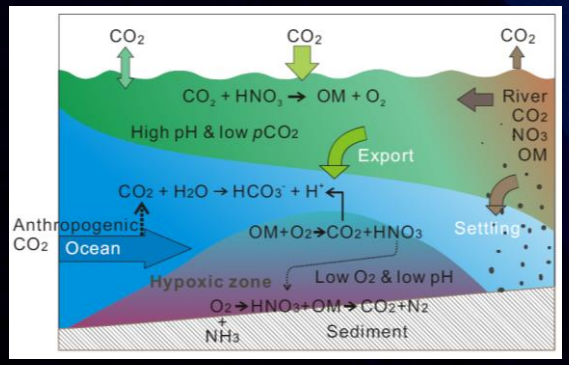
學　　歷：國立中山大學 海洋地質及化學研究所 博士

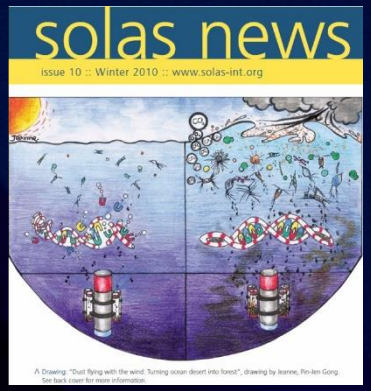
經　　歷：國立臺灣海洋大學 海洋環境與生態研究所 所長
國立臺灣海洋大學 研究發展處 研究船船務中心 主任
國立台灣海洋大學海洋環境與生態研究所 助理教授、副教授、教授
TAO, Frontiers in Marine Science 副主編

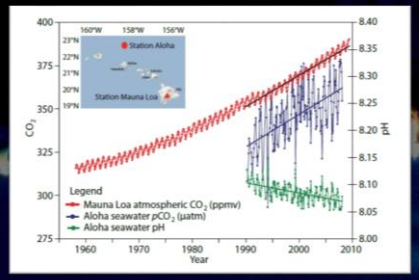
研究領域：化學海洋學、海洋生物地球化學、全球變遷、碳化學

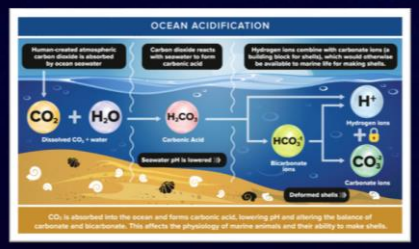
研究內容：

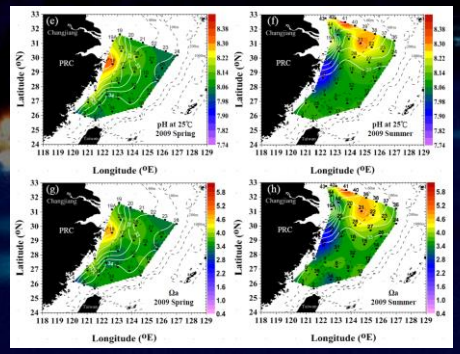
- 海洋對大氣二氧化碳的吸收與釋放
- 海洋酸化對海洋環境與生態的影響
- 沿岸藍碳生態系統的氣候調節功能
- 全球變遷對海洋生物地球化學循環的影響

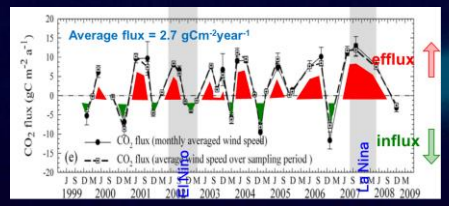












Wen-Chen Chou, Professor

Laboratory of Carbonate Chemistry

Education：
- Institute of Marine Geology and Chemistry, National Sun Yat-sen University (Ph.D.)

Professional experience：
- Director, Institute of Marine Environment and Ecology, NTOU
- Director, Center for Research Vessel Management, NTOU
- Assistant, Associate, and Full Professor, Institute of Marine Environment and Ecology, NTOU
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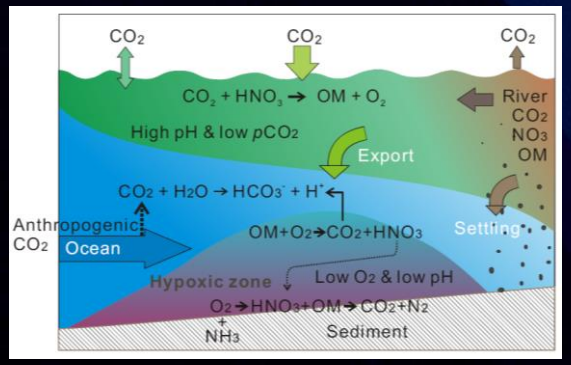
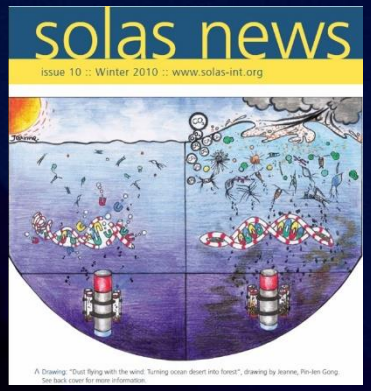
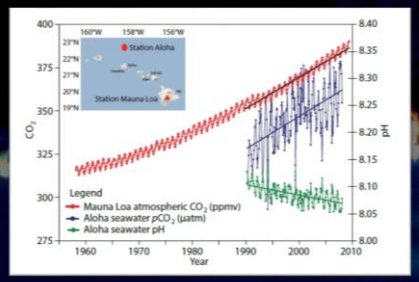
- Chemical Oceanography, Marine Biogeochemisty, Carbon Chemistry, Global Change

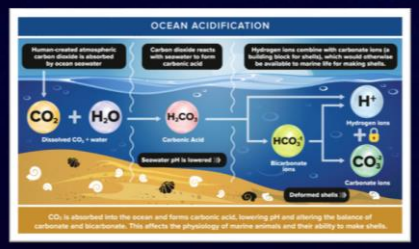
Research interest：

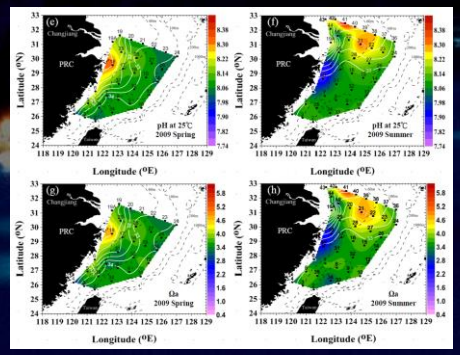
- Air-sea CO_2 exchange flux
- Ocean acidification and its impact on marine environment and ecology
- The role of costal blue carbon ecosystem on climate mitigation
- Global change and its impacts on marine environment and ecology

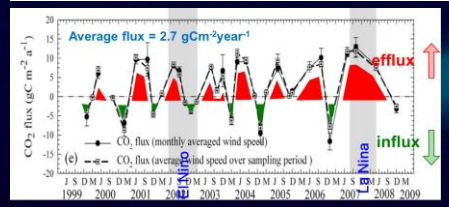












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ORIGINAL RESEARCH
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Contrasting Changes in Diel Variations of Net Community Calcification Support That Carbonate Dissolution Can Be More Sensitive to Ocean Acidification Than Coral Calcification

Wen-Chen Chou[1,2], Pi-Jen Liu[3,4], Ying-Hsuan Chen[1] and Wei-Jen Huang[5]*

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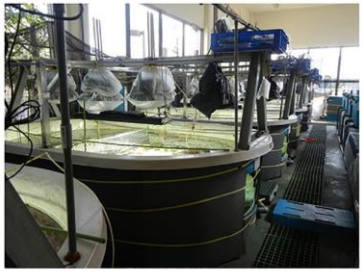
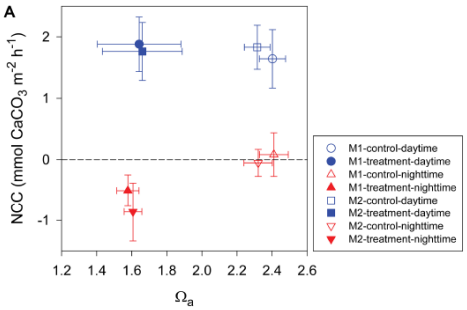
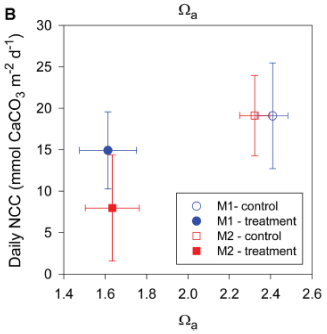
重要研究成果

- 過去研究認為海洋酸化對於珊瑚礁生態系的威脅主要起因於珊瑚鈣化速率的降低。但是近年來有越來越多的研究結果顯示，海洋酸化所引起碳酸鈣溶解速率的增加，可能也會造成珊瑚礁逐漸消退，但兩者的相對敏感性則尚不清楚。本研究提出由於珊瑚礁鈣化作用主要發生在白天，而碳酸鈣溶解作用主要則發生在夜間。因此，可利用中觀生態缸模擬海洋酸化對珊瑚礁生態系淨族群鈣化速率日夜變化影響的差異，來釐清兩者對海洋酸化影響的相對敏感性。研究結果顯示白天的淨族群鈣化速率在酸化前後並無明顯差異，而夜間的淨族群鈣化速率在酸化後則明顯降低，佐證了碳酸鈣溶解作用的增加對海洋酸化的反應可能比珊瑚鈣化速率的降低更加敏感。換言之，海洋酸化對珊瑚礁生態系的威脅，可能主要來自於碳酸鈣溶解速率的增加，而非過去所認為的鈣化速率的降低。







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BRIEF RESEARCH REPORT
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Short-Term Variability of Biological Production and CO_2 System Around Dongsha Atoll of the Northern South China Sea: Impact of Topography-Flow Interaction

Jen-Hua Tai[1], Wen-Chen Chou[2,3], Chin-Chang Hung[4], Kuan-Chieh Wu[2], Ying-Hsuan Chen[2], Tzong-Yueh Chen[2], Gwo-Ching Gong[2,3], Fuh-Kwo Shiah[1,2] and Chun Hoe Chow[5]*

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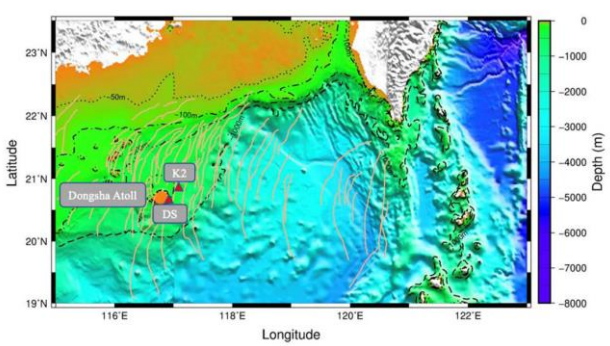
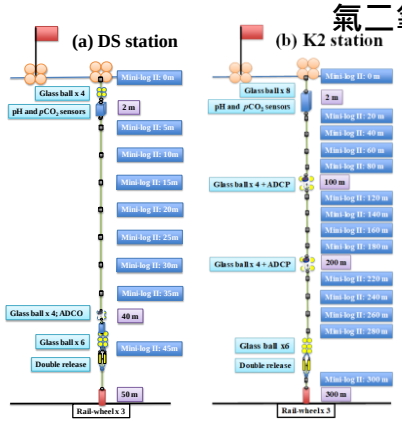
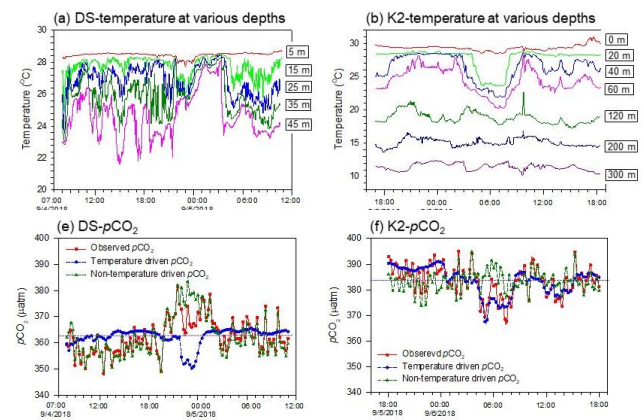
Edited by:
Christian Lønborg,

重要研究成果

- 內波對海洋二氧化碳系統影響：南海北部是全球內波振幅最大的海域。過去的研究結果顯示，內波通過時會增強海水的垂直混合作用，增加透光層中營養鹽的供應，進而促成了較高的生物生產力。但內波通過所引發的高生物生產力是否能進一步降低海水中的二氧化碳分壓？進而增強海洋對大氣二氧化碳的吸收能力？是一個非常重要，但是到目前為止卻尚未被釐清的問題。本研院在東沙鄰近海域利用錨碇及現場連續採樣的方式，觀測了內波通過深水區和淺水區時水文及生地化反應的差異。研究結果顯示，內波通過淺水區時所引起的降溫作用以及較高的生物生產力，可共同造成表水二氧化碳分壓的下降，進而增強了該海域對大氣二氧化碳的吸收能力。本研究首度以觀測資料證實了，內波通過不僅有助於提升寡營養鹽海域的生物生產作用，亦能增進該海域對大氣二氧化