

Full Publication List

Book Edited:

1. *Advances in Geosciences, Ocean Science* (2009), edited by: **J. Gan** (Hong Kong University of Science and Technology), v. 12, pages 260, ISBN: 978-981-283-615-1., World Scientific Publishing Company
2. *Advances in Geosciences, Ocean Science* (2010), edited by: **J. Gan** (Hong Kong University of Science and Technology), v. 18, pages 248, ISBN: 978-981-283-813-1., World Scientific Publishing Company
3. *Advances in Geosciences, Ocean Science* (2011), edited by: **J. Gan** (Hong Kong University of Science and Technology), v. 24, pages 144, ISBN: 978-9814355346., World Scientific Publishing Company

Refereed book chapter:

1. **Gan, J.***, J. Hu and Z. Liu (2020). Ocean processes and responses under the climate changing in China Seas (in Chinese). *The first scientific assessment of ocean and climate change*, Ocean Press, Beijing.
2. **Gan, J.***, Z. Liu, Rex Hui, Y. Tang, Z. Cai and J. Li (2020). The Changing Circulation of Asia-Pacific Marginal Seas in the South China Sea: a Physical View *The Changing Asia-Pacific Marginal Seas*, ed. by Arthur Chen and Xinyu Guo. Springer.
3. Lin, P. **J. Gan** and J. Hu* (2020). Coastal upwelling in the northern South China Sea. *Regional Oceanography of the South China Sea*, pp 289-321. ed. by Hu et al. , World Scientific. <https://doi.org/10.1142/97898112069170011>
4. Dai, M.* , **J. Gan**, A. Han, H. S. Kung and Z. Yin (2012). Physical Dynamics and Biogeochemistry of the Pearl River Plume. *Biogeochemical Dynamics at Large River-Coastal Interfaces: Linkages with Global Climate Change*. Edited by Thomas Bianchi, Mead Allison, and Wei-Jun Cai.
5. Chen*, P., R. Ingram, and **J. Gan** (1993). A numerical study of hydraulic jump and mixing in a stratified channel with a sill. *Estuary and Coastal Modeling III*, ed. by M. Spauldng et al., Oak Brook, Illinois, 119-133.

Peer-reviewed paper:

2025 :

145. Qi, H., Y. Liu, H. Wang, X. Kuang, A. N. Putra, J. Jiao and **J. Gan**, 2025. Carbonate weathering enhances nitrogen assimilatory uptake in rivers globally, *Nature Geoscience*, <https://doi.org/10.1038/s41561-025-01680-w>.
144. Xu, Z., J. Li, P. Zhang, J. You and **J. Gan***, 2025. Mapping internal lee wave generation and dissipation in the deep South China sea, *Prog. Oceanogr.*, 235, 103474.
143. Lin, S. and **J. Gan***, 2025. Dynamic adjustment of upwelling circulation to conservative waves effects over a steep shelf. *J. Phys. Oceanogr.* JPO-D-24-0154
142. Zhang, Y. and **J. Gan***, 2025. Spatiotemporal dynamics of future hydrology in the Pearl River Basin: Controls of climate change and land surface. *J. of Hydrology: Regional Studies*,

58, 102239.

141. Eusebi1, R., H. Su,* , L. Wu, P. Rong, K. Balaguru, R. Leung, Y. Choi, P. Chan, **J. Gan**, M. DeMaria, G. Chirokova, 2025. Improving tropical cyclone rapid intensification forecasts with satellite measurements of sea surface salinity and calibrated machine learning. *Environmental Research Letters*, 20 034010DOI 10.1088/1748-9326/adac7f

140. Chen, X., **J. Gan**, L. Fu* , 2025. The mean temperature-velocity relation and a new temperature wall model for compressible laminar and turbulent flows. *J. Fluid Mechanics*, Vol. 1009, A39 <https://doi.org/10.1017/jfm.2025.312>

2024 :

139. Wu, B.* and **J. Gan**, 2024. Long-term variation of the eddy kinetic energy in the North-eastern South China sea, *Prog. Oceanogr.*, 229, 103366.

138. Sun. J., L. Yu, X. Yang, **J. Gan**, H. Liu, J. Li* , 2024. Sediment oxygen uptake and hypoxia in coastal oceans, the Pearl River Estuary region. *Water Res.*, WR88297R1.

137. Chen. X., **J. Gan***, Rex Hui and J. McWilliams, 2024. Parameterization of the vertical mixing for the Luzon undercurrent in the northern Western Pacific Ocean. *J. Geophys. Res.-Oceans*, 2024JC021378

136. Wang, Z., Z. Cao,* , Z. Liu, W. Zhai, Y. Luo, Y. Lin, E. Roberts1, **J. Gan**, M. Dai* , 2024. Pacific Ocean originated anthropogenic carbon and its long-term variations in the South China Sea. *Science Advances*, No. adn9171

135. Chen. X., **J. Gan*** and J. McWilliams, 2024. Baroclinic nonlinear saturation and secondary instability of current-undercurrent meanders. *Physical Review Fluids*,FU10298.

134. Lin, S. and **J. Gan***, 2024. Dynamics of tidal effects on coastal upwelling circulation over variable shelves in the northern South China Sea. *J. Geophys. Res. (Oceans)*, 2024JC021193.

133. Cheng, W. and **J. Gan***, 2024. Variability of the bottom boundary layer induced by the dynamics of the cross-isobath transport over a variable shelf. *J. Geophys. Res. (Oceans)*, 2024JC020895.

132. Sun, J. L. Yu, X. Yang, **J. Gan**, H. Yin, J. Li* , 2024. Sediment oxygen uptake and hypoxia: a simple mass-balance model for estuaries and coastal oceans. *ESS Open Archive*, doi: 10.22541/essoar.171042761.13416162/v1.

131. Chen, X., **J Gan**, L. Fu* , 2024. An improved Baldwin-Lomax algebraic wall model for high-speed canonical turbulent boundary layers using established scalings. *J. Fluid Mechanics*, JFM-23-1613.R2.

130. Zhang, Y., **J. Gan***, Q. Yang, 2024. Spatiotemporal variability of streamflow in the Pearl River Basin: controls of land surface processes and atmospheric impacts. *Hydrological process*, doi: 10.1002/hyp.15151

129. Lin, Y., **J. Gan**, Z. Cai, Q. Quan, T. Zu, Z. Liu* , 2024. Coherent interannual decadal potential temperature variability in the tropical north Pacific Ocean and deep South China Sea. *Geophys. Res. Lett.*, <https://doi.org/10.1029/2023GL106256>.

128. Wu, B.* , **J. Gan**, X. Lin, and B. Qiu, 2024. Long-term decreasing of sea level along latitude of the Luzon Strait during 1993-2020: surface versus subsurface perspectives. *J. Geophys. Res. (Oceans)*, <https://doi.org/10.1029/2023JC019805>.

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- 127.** Lai, W. and **J. Gan*** (2023) Variability in coastal downwelling circulation in response to high-resolution regional atmospheric forcing off the Pearl River estuary. *Ocean science*, v. 19, Issue: (4), 1107-1121, ISSN: 1812-0784;1812-0792, DOI: 10.5194/os-19-1107-2023.
- 126.** Chen, X., **J. Gan***, and J. McWilliams (2023). Biglobal analysis of baroclinic instability in a current-undercurrent oceanic system, *Phys. Rev. Fluids*, FG10238.
- 125.** Zhao, F., **J. Gan**, Kun Xu* (2023). High-order compact gas-kinetic scheme for two-layer shallow water equations on unstructured mesh. *J. Comput. Phys.* 498 (2024) 112651.
- 124.** Chen, X., C. Cheng, **J. Gan** and L. Fu* (2023). Study of the linear models in estimating coherent velocity and temperature structures for compressible turbulent channel flows. *J. Fluid Mechanics*, v. 973, No: A36, ISSN: 0022-1120;1469-7645, DOI: 10.1017/jfm.2023.768.
- 123.** Liang, W. T. Liu, Y. Wang J Jiao,**J. Gan** and D. He* (2023). Spatiotemporal-aware machine learning approaches for dissolved oxygen prediction in coastal waters *Science of the Total Environment*, Vol: v. 905, No: 167138, ISSN: 0048-9697;1879-1026, DOI: 10.1016/j.scitotenv.2023.167138.
- 122.** Lu, Y., S. Cheung, X., Koh, X. Xia, H. Jing, P. Lee, S. Kao, **J. Gan**, M. Dai and H. Liu* (2023). Nitrification Microbial Assemblages in the Hypoxic Zone in a Subtropical Estuary. *SSRN Electronic Journal*, DOI:10.2139/ssrn.4033193.
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- 120.** Li, D. and **J. Gan***, Z. Lu, W. Cheng, H. Kung and J. Li (2023). Hypoxia formation triggered by the organic matter from subsurface chlorophyll maximum in a large estuary-shelf system *Water Research.* . 240, Period: 15 July 2023, Article No: 120063, ISSN: 0043-1354;1879-2448, DOI: 10.1016/j.watres.2023.120063.
- 119.** Lu, Z. and **J. Gan*** (2023). A modeling study of nutrient transport and dynamics over the northern slope of the South China Sea. *J. Geophys. Res.-Oceans.* 2022JC019225.
- 118.** Zhang, L., T. Cheng, L. Meng*, R. Xiong and **J. Gan** (2023). Tropical cyclone stalling shifts northward and brings increasing flood risks to East Asian Coast *Geophys. Res. Lett.*. <http://dx.doi.org/10.1029/2022GL102509>.
- 117.** Chen, X., C. Cheng, L. Fu* and **J. Gan** (2023). Linear response analysis of supersonic turbulent channel flows with a large parameter space. *J. Fluid Mechanics*, 962, A7, doi:10.1017/jfm.2023.244.
- 116.** Cai*, Z., D. Chen and **J. Gan** (2023). Formation of the layered circulation in South China Sea with the mixing stimulated exchanging current through Luzon Strait. *J. Geophys. Res.-Oceans*,17673334, doi: 10.1029/2023JC019730.
- 115.** Sun, Z., Z. Zhang, R. Huang, **J. Gan**, C. Zhou, W. Zhao*, J. Tian (2023). Novel insights into the zonal flow and transport in the Luzon Strait based on long-term mooring observations. *J. Geophys. Res.-Oceans.* 2022JC019017.
- 114.** Dai*, M., Y. Zhao, F. Chai, M. Chen, N. Chen, Y. Chen, D. Cheng and **J. Gan** et al. (2023). Persistent eutrophication and hypoxia in the coastal ocean, *Cambridge Prisms: Coastal Futures*, CFT-22-0058.R1.

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- 112.** Li, J. and **J. Gan*** (2022). How the forcing dynamics of the Western Boundary Currents in the Pacific respond to the North Equatorial Current, *Progress in Oceanogr.*, PROOCE 102950.
- 111.** Cheng, W. and **J. Gan*** (2022). Responses of coastal upwelling to tidally induced bottom friction dynamics and plume-modulated geostrophy: a process-oriented modeling study. *J. Phys. Oceanogr.*, doi: 10.1175/JPO-D-22-0037.1
- 110.** Lai, W. **J. Gan*** (2022). Impacts of high-resolution atmospheric forcing and air-sea coupling on coastal ocean circulation off the Pearl River Estuary. *Estuarine, Coastal and Shelf Science*, YECSS-D-22-00113.
- 109.** Li, J. and **J. Gan*** (2022) Characteristics and formation of the Luzon undercurrent near the western north Pacific boundary. *J. Geophys. Res.-Oceans*, doi: 10.1029/2022JC019160.
- 108.** Deng, Y., Z. Liu*, T. Zu, J. Hu, **J. Gan**, Y. Lin, Z. Li, Q. Quan, Z. Cai* (2022). Climatic Controls on the Interannual Variability of Shelf Circulation in the Northern South China Sea. *J. Geophys. Res. (Oceans)*, doi: 10.1029/2022JC018419.
- 107.** Li, J. and **J. Gan*** (2022). On the North equatorial current spatiotemporal modes and responses in the western boundary currents. *Progress in Oceanogr.*, [://doi.org/10.1016/j.pocean.2022.102820](https://doi.org/10.1016/j.pocean.2022.102820).
- 106.** **Gan, J***, H. Kung, Z. Cai, Z. Liu, C. Hui, J. Li (2022). Hotspots of the Stokes rotating circulation in a large marginal sea. *Nature Communications*, 13, 2223. <https://doi.org/10.1038/s41467-022-29610-z>.
- 105.** Dai, M*., J. Su, Y. Zhao, E. E. Hofmann, Z. Cao, W, Cai, **J. Gan**, F. Lacroix, G. G. Laruelle, F. Meng, J. Mller, P.A.G. Regnier, G. Wang, and Z. Wang (2022). Carbon Fluxes in the Coastal Ocean: Synthesis, Boundary Processes and Future Trends. *Annual Review of Earth and Planetary Sciences*. <https://doi.org/10.1146/annurev-earth-032320-090746>
- 104.** Lu, Z, L. Yu and **J Gan*** (2022). External and internal forcings for hypoxia formation in an urban harbour in Hong Kong. *Front. Mar. Sci.* 9:858715. doi: 10.3389/fmars.2022.858715.
- 103.** Yu, L. and **J. Gan*** (2022). Reversing impact of phytoplankton phosphorus limitation on coastal hypoxia due to interacting changes in surface production and shoreward bottom oxygen influx. *Water Research*, doi: <https://doi.org/10.1016/j.watres.2022.118094>
- 102.** Zhang, Y., X. Wang, X. Wang, R. Zhang, Y. Li, **J. Gan** (2022). IOD, ENSO, and seasonal precipitation variation over Eastern China. *Atmospheric Research*, 106042, ATMOS106042, S0169, 8095(22)00028

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- 101.** Han, A., **J. Gan***, M. Dai, Z. Lu L. Liang and X. Zhao (2021). Intensification of downslope nutrient transport and associated biological responses over the northeastern South China Sea during wind-driven downwelling: a modeling study. *Front. Mar. Sci.*, 8:772586. doi: 10.3389/fmars.2021.772586.
- 100.** Cai*, Z., G. Liu, Z. Liu, **J. Gan** (2021). Three dimensional seasonal and intra-tidal variabilities of water exchange in the Pearl River Estuary. *Estuarine, Coastal and Shelf Science* (in press).

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98. Lee, J., J. T. Liu*, I. H. Lee, K. H. Fu, R. J. Yang, W. Gong and **J. Gan** (2021). Encountering shoaling internal waves on the dispersal pathway of the pearl river plume in summer. *Scientific Reports* (2021) 11:999, <https://doi.org/10.1038/s41598-020-80215-2>.
97. Zhao, F., **J. Gan**, K. Xu* (2021). The study of shallow water flow with bottom topography by high-order compact gas-kinetic scheme on unstructured mesh. *Physics of Fluids*, POF21-AR-FMW2021-02762R.
96. Chen, F., X. P. Koh, M. L. Y. Tang, **J. Gan**, S. C.K. Lau* (2021). Microbiological assessment of ecological status in the Pearl River Estuary, China *Ecological Indicators* 130 (2021) 108084.
95. Xu, Z., Y. Wang, Z. Liu , J. C. McWilliams, and **J. Gan*** (2021). Insight into the dynamics of the radiating internal tide associated with the Kuroshio Current. *J. Geophys. Res.-Oceans*,126, e2020JC017018. <https://doi.org/10.1029/2020JC017018>.
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89. Liu, Z.* , **J. Gan**, H. Wu, J. Hu, Z. Cai, Y. Deng (2021). Advances on Coastal and Estuarine Circulations around the Changjiang Estuary in the Recent Decades (2000-2020). *Frontiers in Marine Science, section Coastal Ocean Processes* <https://doi.org/10.3389/fmars.2021.615929>.

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