Symposium on Ocean Circulation, Ecosystem, HypoxiA and CoNsequences (OCEAN_HK) 2018

IAS Lecture Theater, Lo Ka Chung Building, Lee Shau Kee Campus, HKUST
March 4-6, 2018

Conveners:
- Prof. Jianping Gan (Hong Kong University of Science and Technology)
- Prof. Minhan Dai (Xiamen University)
- Prof. Paul Lam (City University of Hong Kong)
- Prof. Hongbin Liu (Hong Kong University of Science and Technology)

Organized/sponsored by:
- OCEAN_HK Theme-based Research Scheme Project
- School of Science, Hong Kong University of Science and Technology
- Department of Ocean Science, School of Science, HKUST
- Department of Mathematics, School of Science, HKUST
- HKUST Jockey Club Institute for Advanced Study
Introduction

Project title: “Diagnosis and prognosis of intensifying eutrophication, hypoxia and the ecosystem consequences around Hong Kong waters: coupled physical-biogeochemical-pollution studies” is one of the elected project from Theme-based Research Scheme 2016/17, which is funded by the Research Grants Council. This joint project involved five local Universities, HKUST, CityU, HKU, PolyU and CUHK, plus collaboration with Xiamen University, Institute of Atmospheric Physics CSA and National Taiwan University.

Symposium of “Ocean Circulation, Ecosystem and HypoxiA around Hong Kong waters (OCEAN_HK)” is the project annual meeting serves to draw on collective wisdom and absorb all useful ideas for future years. Meanwhile, scientists from mainland China and overseas will also attend the symposium, it is a scarce occasion to have a high-level scientific discussion, regarding to eutrophication and hypoxia in the ocean, in Hong Kong. We aim to advance full-spectrum understanding of physical, biogeochemical, and pollution processes that control the eutrophication and hypoxia. We emphasize interdisciplinary study with world-class methodology and multi-scale perspective of ocean in the linked river-estuary-shelf-basin system.

In 2017, a full-scale piloting cruise has been completed in Pearl River Estuary, the shelf sea in the northern South China Sea and Hong Kong water area. The team got satisfactory outcome and delivered planned goals in stage one. In this year symposium, an ad hoc Assessment Committee has been formed and chaired by Prof. Jilan Su (SOA), with committee members: Prof. Dunxin Hu (CAS), Prof. Dake Chen (SOA), Prof. Renhe Zhang (Fudan U) Prof. Don Anderson (WHOI) and Prof. Jim McWilliams (UCLA). The purpose of forming this committee is serve to assess the project progress and giving comments and calibrate for the future plan.
Program

March 4
Venue: HKUST Room 4379 (Lift 17-18)
15:30  Meeting of Steering Committee and ad hoc Assessment Committee

March 5
Morning session
Venue: HKUST IAS Lecture Theater
08:15  Free shuttle Bus departure from Holiday Inn to HKUST IAS building
09:00  Symposium Opening

Part 1: OCEAN_HK Progress Reports

Section 1  Chair: Jian Su, State Key Lab of Satellite Ocean Environment Dynamics, SOA (each with 25 min talk plus 10 min Q&A)

09:15  Progress Reports
   Jianping Gan, Hong Kong University of Science and Technology

09:50  Task 1: Sources and sinks of nutrients and their biogeochemical controls
   Minhan Dai, State Key Lab of Marine Environmental Science, Xiamen University

10:25  Task 2: Ecosystem dynamics and biological controls
   Hongbin Liu, Hong Kong University of Science and Technology

11:00  20-minute tea or coffee break and posters discussion

11:20  Task 3: Pollutant and ecosystem impacts
   Paul Lam, State Key Lab in Marine Pollution, City University of Hong Kong

11:55  Task 4: Physical controls, synthesis, and future trends
   Jianping Gan, Hong Kong University of Science and Technology

12:30  Lunch break
March 5
Afternoon session
Venue: HKUST IAS Lecture Theater

Section 2

Chair: Paul Lam, State Key Lab in Marine Pollution, City University of Hong Kong
(each with 15 min report plus 5 min Q&A)

14:00 The isotope analysis to identify sources of nutrients in PRE and HK waters
David Baker, The University of Hong Kong

14:20 Assessment of benthic - pelagic coupling in a hypoxic/eutrophied environment
Ang Put, The Chinese University of Hong Kong

14:40 Phytoplankton species and buoy observations in Hong Kong Water
Leo Chan, State Key Lab in Marine Pollution, City University of Hong Kong

15:00 Bacterioplankton samples and preliminary identification of their spatiotemporal characteristics in the RES
Stanley Lau, Hong Kong University of Science and Technology

15:20 Sediment erosion/deposition in PRE and HK waters
Onyx Wai, The Hong Kong Polytechnic University

15:40 20-minute tea or coffee break and posters discussion

Section 3

Chair: Hongbin Liu, Hong Kong University of Science and Technology

16:00 Test and set-up methodology for implement data assimilation scheme in the Model
Jiang Zhu, Institute of Atmospheric Physics

16:20 Modeling and observation study of ocean circulation in the PRE and HK waters
Zhiqiang Liu, Hong Kong University of Science and Technology

16:40 Toward understanding the factors influencing the stability of buoyant coastal currents
Shih-nan Chen, National Taiwan University

17:00 Modeling study of hypoxia in the western PRE
Zhongming Lu, Hong Kong University of Science and Technology

17:45 Free Shuttle Bus departure from IAS to Holiday Inn

18:00 Dinner at Modern China Restaurant (RSVP)
Address: Shop 702, 7/F, Holiday Inn Express, Tower 4, 3 Tong Tak Street, Tseung Kwan O

21:00 Free Shuttle Bus departure from Holiday Inn to Conference Lodge
March 6
Morning session
Venue: HKUST IAS Lecture Theater

08:30 Free shuttle Bus departure from Holiday Inn to HKUST IAS building

Part 2: Invited talks

Section 4 Chair: Dake Chen, State Key Lab of Satellite Ocean Environment Dynamics

09:00 Surface-layer and topographic submesoscale currents
Jim McWilliams, UCLA Institute of Geophysics and Planetary Physics and Department of Atmospheric and Oceanic Sciences

09:30 Modeling nutrients and plankton dynamics in the San Francisco Bay
Fei Chai, University of Maine and State Key Lab of Satellite Ocean Environment Dynamics, SOA

09:45 Sediment transport through the Bohai Strait
Jingping Xu, Southern University of Science and Technology

10:00 N removal processes in the PRE
Shuji Kao, State Key Lab of Marine Environmental Science, Xiamen University

10:15 15-minute tea or coffee break and posters discussion

Section 5 Chair: Minhan Dai, State Key Lab of Marine Environmental Science, Xiamen University

10:30 Novel insights into harmful algal bloom (HAB) dynamics using in situ autonomous biosensors
Don Anderson, Woods Hole Oceanographic Institution

10:45 Variabilities in the heat and salt budget of the upper layer in the South China Sea
Dongxiao Wang, The South China Sea Institute of Oceanography, CAS

11:00 Nearshore circulation, transport, and implications on population connectivity in a macro tidal environment
Huijie Xue, University of Maine and South China Sea Institute of Oceanography, CAS

11:15 Precipitation, streamflow and water quality data in the Pearl River basin during 2017 cruise: observation and modeling
Ji Chen, The University of Hong Kong, Task 4

11:30 Poster Session

12:30 Lunch and ad hoc committee meeting
March 6
Afternoon session
Venue: HKUST IAS Lecture Theater

Section 6 Chair: Fei Chai, University of Maine and State Key Lab of Satellite Ocean Environment Dynamics, Second Institute of Oceanography SOA

14:00 Patterning multitrophic community and trophic network in a temperate, low-turbity estuarine bay of Korea
Chang-Keun Kang, Gwangju Institute of Science and Technology

14:15 Dynamics of nutrients in Pearl River Estuary and adjacent coastal waters
Jie Xu, South China Sea Institute Of Oceanology CAS

14:30 Adjustment of river plume front during downwelling favorable wind Events
Peng Cheng, State Key Lab of Marine Environmental Science, Xiamen University

14:45 15-minute tea or coffee break

Part 3: Summary and Planning

Section 7 Chair: Minhan Dai, State Key Lab of Marine Environmental Science, Xiamen University

15:00 Report of the assessment committee and discussion
Jilan Su, State Key Lab of Satellite Ocean Environment Dynamics, SOA

15:30 RGC site-visit 2018 planning

15:45 Plan and calibration of cruise_2018 and research plan and discussion

18:00 Dinner at on-campus G/F Chinese Restaurant (RSVP)

21:00 Free shuttle Bus departure from HKUST Piazza to Holiday Inn
## Posters

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Unit</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dujun Wei, Cyvia</td>
<td>Department of Mathematics, HKUST</td>
<td>Spatiotemporal Variability of Physical-Biological Process in Hong Kong Waters: Observational Study</td>
</tr>
<tr>
<td>2</td>
<td>Chi Wing HUI, Rex</td>
<td>Department of Mathematics, HKUST</td>
<td>Three-dimensional circulation in the Pearl River Estuary (PRE) inferred from vorticity dynamics</td>
</tr>
<tr>
<td>3</td>
<td>Zhiyuan Shi</td>
<td>Department of Ocean Science, HKUST</td>
<td>Mesozooplankton biomass, composition and grazing during summer bottom-layer hypoxia in the Pearl River Estuary</td>
</tr>
<tr>
<td>4</td>
<td>Ying Ke</td>
<td>Division of Life Science, HKUST</td>
<td>Dynamics of carbon metabolism of free-living and particle-attached bacteria at two contrasting subtropical coastal sites</td>
</tr>
<tr>
<td>5</td>
<td>Xiao Feng</td>
<td>Department of Civil Engineering, HKU</td>
<td>Numerical modeling of streamflow and sediment over the Pearl River basin to the estuary</td>
</tr>
<tr>
<td>6</td>
<td>Wenzhe Wu</td>
<td>Division of Life Science, HKUST</td>
<td>Disentangling protist communities identified from DNA and RNA surveys in the Pearl River-South China Sea Continuum during the wet and dry seasons</td>
</tr>
<tr>
<td>7</td>
<td>Yingdong Li</td>
<td>Division of Life Science, HKUST</td>
<td>Metagenomic Binning to Elucidate Bacterial Adaptation to the Subtropical Pearl River Estuary</td>
</tr>
<tr>
<td>8</td>
<td>Biyan He</td>
<td>State Key Lab of Marine Environmental Science, XMU</td>
<td>Dynamics of dissolved organic matter in the Pearl River Estuary: Examining the relative role of mixing, photosynthesis, and microbial alterations</td>
</tr>
<tr>
<td>9</td>
<td>Lifang Wang</td>
<td>State Key Lab of Marine Environmental Science, XMU</td>
<td>Source and distribution of nutrients in the Pearl River Estuary in July 2017</td>
</tr>
<tr>
<td>10</td>
<td>Yangyang Zhao</td>
<td>State Key Lab of Marine Environmental Science, XMU</td>
<td>Reoccurrence of the hypoxia zone in the lower reach of Pearl River estuary: Lateral shifting or reformulation</td>
</tr>
<tr>
<td>No.</td>
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<tr>
<td>11</td>
<td>Chuanjun Du</td>
<td>State Key Lab of Marine Environmental Science, XMU</td>
<td>Modeling the dissolved inorganic carbon in the South China Sea</td>
</tr>
<tr>
<td>12</td>
<td>Jing Liu</td>
<td>State Key Lab of Marine Environmental Science, XMU</td>
<td>Dynamics of ammonium in the PRE</td>
</tr>
<tr>
<td>13</td>
<td>Mirabelle M.P. TSUI/Tangtian HE</td>
<td>State Key Lab in Marine Pollution, CityU</td>
<td>Occurrence, Distribution and Fate of Organic UV Filters in South China Coastal Environment</td>
</tr>
<tr>
<td>14</td>
<td>Ling Chen</td>
<td>State Key Lab of Marine Environmental Science, XMU</td>
<td>The transformation processes of ammonia at the Peral River Estuary in summer</td>
</tr>
</tbody>
</table>
HKUST Campus Map
From Hong Kong International Airport to HKUST

Below are some options for getting to HKUST from the Hong Kong International Airport. If you are carrying a lot of luggage with you, taking the taxi directly to campus is the most convenient option.

<table>
<thead>
<tr>
<th>Transportation options</th>
<th>Estimated time</th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red taxi</strong> (Hong Kong International Airport → HKUST)</td>
<td>45 minutes</td>
<td>Around HK$360</td>
</tr>
<tr>
<td><strong>Airport Express + Red taxi</strong> (Hong Kong International Airport → Kowloon Station) (Kowloon Station → HKUST)</td>
<td>50 minutes</td>
<td>Around HK$325</td>
</tr>
<tr>
<td><strong>Bus Number A29 + Bus Number 91M</strong> (Hong Kong International Airport → Po Lam) (Po Lam → HKUST)</td>
<td>115 minutes</td>
<td>HK$107</td>
</tr>
</tbody>
</table>
**From Hung Hom Train Station to HKUST**

If you take the through train that goes directly to Hong Kong from Beijing, Shanghai, Guangzhou, you will arrive at Hung Hom Train Station. You can then take the MTR to Hang Hau Station, which is the nearest station to HKUST. Then, take a taxi to the university. Alternatively, you can take a taxi from Hung Hom to get to HKUST.

<table>
<thead>
<tr>
<th>Transportation options</th>
<th>Estimated time</th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red taxi (Hung Hom Station  (\rightarrow) HKUST)</td>
<td>30 minutes</td>
<td>Around HK$160</td>
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<tr>
<td>MTR + Red/Green taxi (Hung Hom Station  (\rightarrow) Hang Hau Station) (Hang Hau Station  (\rightarrow) HKUST)</td>
<td>50 minutes</td>
<td>Around HK$62</td>
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</table>

Click here to visit the MTR website ([http://www.mtr.com.hk/eng/homepage/cust_index.html](http://www.mtr.com.hk/eng/homepage/cust_index.html)) for details on fares, routes and journey times.

**Public Transport to/from HKUST**

The MTR (subway) stops that are closest to HKUST are Choi Hung, Diamond Hill, Hang Hau and Po Lam stations. The following bus and minibus services are available for going to and from campus.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Bus</th>
<th>Mini bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choi Hung MTR station</td>
<td>91, 91P, 91M</td>
<td>11, 11S</td>
</tr>
<tr>
<td>Diamond Hill MTR station</td>
<td>91, 91P, 91M</td>
<td></td>
</tr>
<tr>
<td>Ngau Tau Kok MTR station</td>
<td></td>
<td>104</td>
</tr>
<tr>
<td>Hang Hau MTR station</td>
<td>91M</td>
<td>11, 11M, 11S</td>
</tr>
<tr>
<td>Po Lam MTR station</td>
<td>91M</td>
<td>12</td>
</tr>
<tr>
<td>Tseung Kwan O MTR station</td>
<td>792M</td>
<td></td>
</tr>
<tr>
<td>Sai Kung</td>
<td>792M</td>
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</tbody>
</table>

**Pick-Up service**

Organizer can arrange taxi pick up service from Hong Kong International Airport to HKUST or hotel. Please contact Ms. Joyce Ip for advance arrangement. (Tel: 852-34692249/ E-mail: majoyceip@ust.hk)

**HK International Airport Pick-Up point:** In front of the McDonald at Arrival Hall A. In case there is any emergency, Please contact taxi driver at 852-97576003(Mr. Fung).
Accommodation

**Holiday Inn Express Hong Kong Kowloon East**
Tower 4, 3 Tong Tak Street, Tseung Kwan O, Hong Kong

**Conference Lodge**
Li Dak Sum Yip Yio Chin Kenneth Li
Conference Lodge, HKUST, Clear Water Bay, Kowloon, Hong Kong

**Free Shuttle Bus Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 March 2018</td>
<td>8:15 a.m.*</td>
<td>Holiday Inn KE  HKUST IAS building</td>
</tr>
<tr>
<td>5 March 2018</td>
<td>5:45 p.m.</td>
<td>HKUST IAS building  Tseung Kwan O “Modern China Restaurant”</td>
</tr>
<tr>
<td>5 March 2018</td>
<td>9:00 p.m.</td>
<td>Tseung Kwan O “Modern China Restaurant”  Conference Lodge</td>
</tr>
<tr>
<td>6 March 2018</td>
<td>8:30 a.m.*</td>
<td>Holiday Inn KE  HKUST IAS building</td>
</tr>
<tr>
<td>6 March 2018</td>
<td>9:00 p.m.</td>
<td>HKUST Piazza  Holiday Inn KE</td>
</tr>
</tbody>
</table>

*Remarks:*
For the morning sessions from the Holiday Inn to IAS, please wait the shuttle bus at the boarding area outside the Lobby of Holiday Inn at least 5 minutes before the scheduled time. The bus will depart on schedule.

**Contact Person:**
- Miss Joyce / Mobile: 6132-3180
- Dr. Liu, Zhiqiang / Mobile: 6842-0155
- Dr. Lu, Zhongming / Mobile: 6730-5132