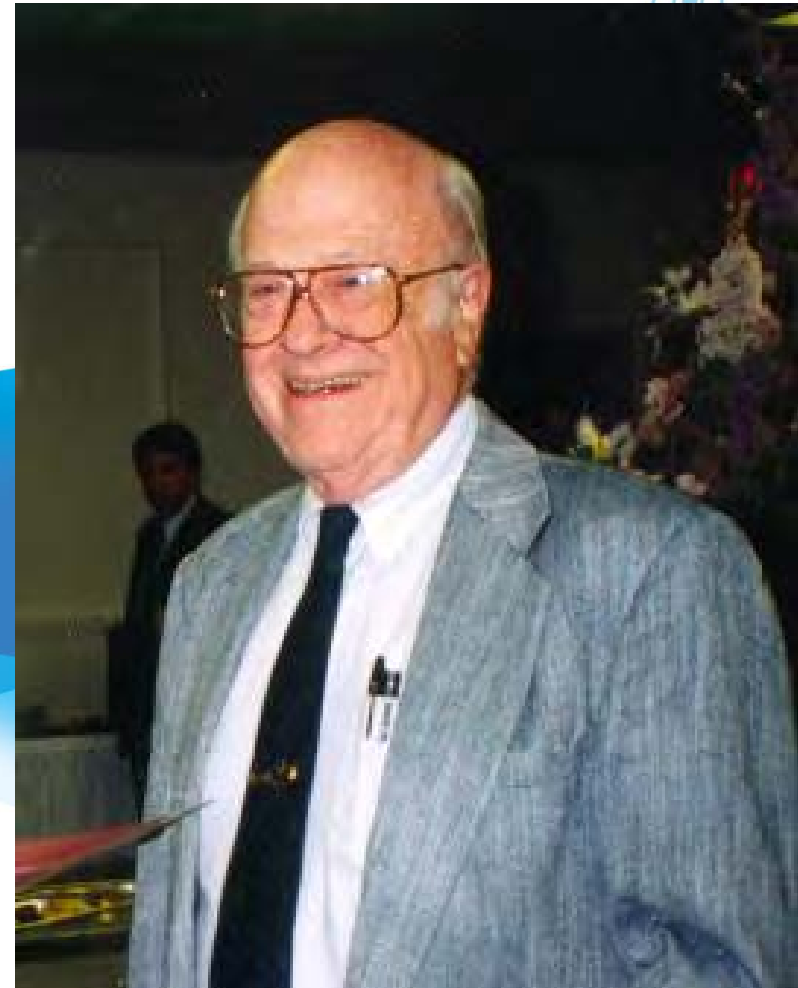


PICES-Logo

Wooster Award 2014





Prof. Dr. Fangli Qiao
First Institute of Oceanography
State Oceanic Administration
Qingdao, China

Dr. Fangli Qiao



Active in Research and International Cooperation on Marine Science & Technology

During a workshop
in Qingdao in 2004



Visited POI, Russia
in Oct 2005





Delivering keynote speech
on PICES Annual Meeting
in 2008

During PORSEC
Conference
in Dec 2008

The First China-Malaysia
Workshop on Marine
Science in March 2010
in Beijing, China



Keynote speech at the 8th
IOC/WESTPAC International
Scientific Symposium
in March 2011, Busan, Korea



During a workshop
in Oct 2010
in Indonesia



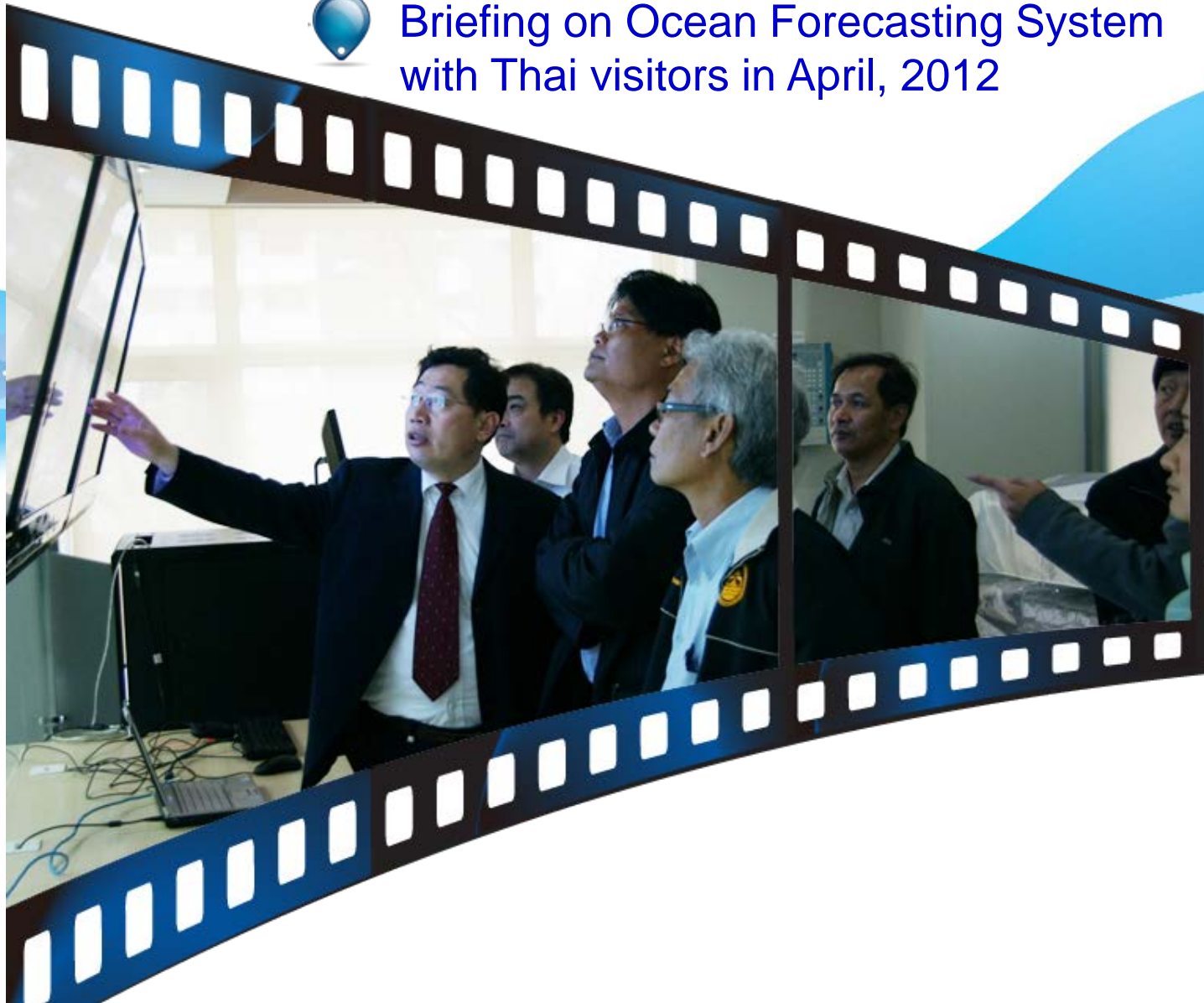
Discussing with Secretary General of
Ministry of Marine Affairs and Fishery of
Indonesia in April 2011



Visiting NCAR and GFDL
in June 2012



Briefing on Ocean Forecasting System with Thai visitors in April, 2012



9th Intergovernmental Session of the IOC Sub-Commission for the Western Pacific

9 - 12 May

PARADISE HOTEL

KOREA



Certificate of Appointment as the founder Director of UNESCO/IOC-ODC



All Chinese participants at 2012 PICES annual meeting, Japan.



Field Observation in 2014 in the SCS



With his research group, Dr. Qiao developed non-breaking wave-induced vertical mixing theory (Qiao et al, 2004, GRL; 2010, OD) ,which can greatly improve the performance of ocean circulation models and climate models.

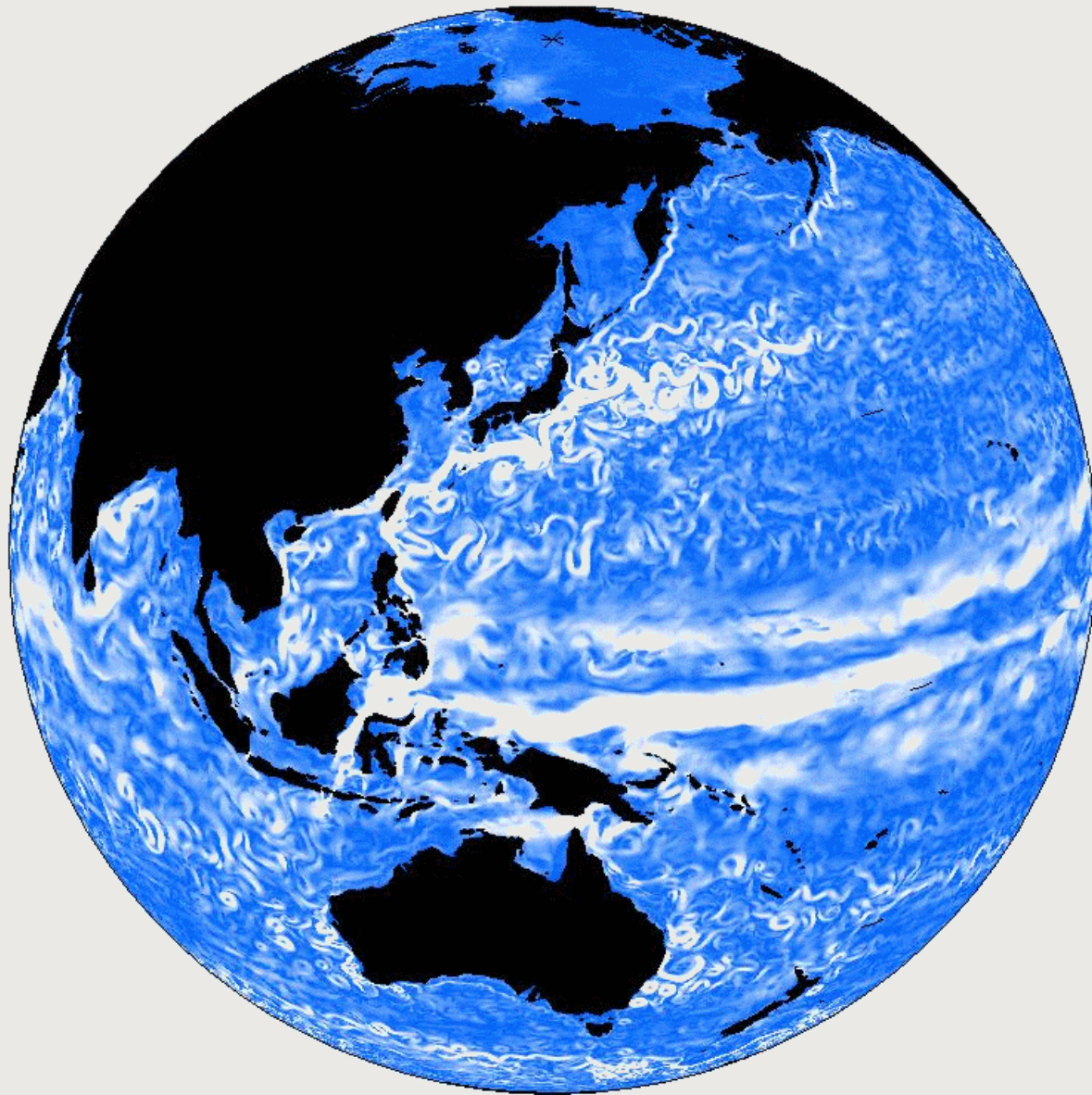
$$B_v = \alpha \iint_{\bar{k}} E(\bar{k}) \exp\{2kz\} d\bar{k} \frac{\partial}{\partial z} \left(\iint_{\bar{k}} \omega^2 E(\bar{k}) \exp\{2kz\} d\bar{k} \right)^{1/2}$$

If we regard surface wave as a monochromatic wave,

$$B_v = \alpha A^3 k \omega e^{(-3kz)} = \alpha A u_s e^{(-3kz)},$$

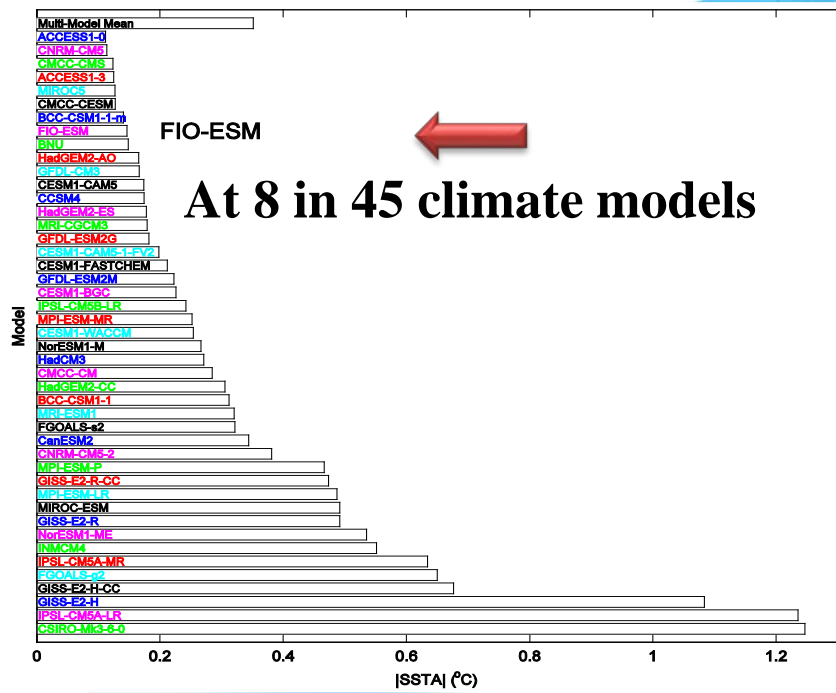
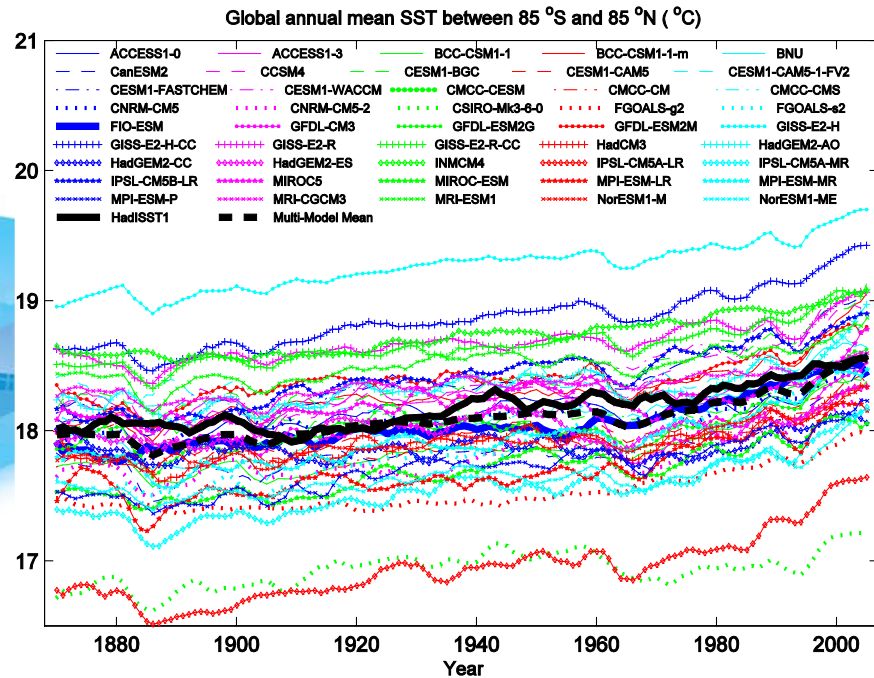
Stokes Drift

The scheme has been tested by GFDL (Fan and Griffies, 2014, JC), Swinburne University of Technology, Australia (Ghantous and Babanin, 2014, NPG), Ocean University of China (Lin et al, 2006, JGR) etc.



FIO wave-circulation coupled model with 0.1 X 0.1 resolution

Dr. Qiao set up the first climate model with surface wave, FIO-ESM, which took part in the CMIP5. The history simulation of SST and Arctic ice is one of the best among all CMIP5 models



Qiao, F., Z. Song, Y. Bao, Y. Song, Q. Shu, C. Huang and W. Zhao, *JGR*, 2013

Song, Z., F. Qiao, and Y. Song, *JGR*, 2012

Song Yajuan, Fangli Qiao and Zhenya Song, *JAS*, 2012

Song Zhenya, Qiao Fangli, and Wang Chunzai, *Science China Earth Sciences*, 2011



**Fangli expects
cooperation with you**

See you in Oct, 2015 in Qingdao



PICES

North Pa
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Keynote speech for
PICES in 2008