

京都大学若手人材海外派遣事業 ジョン万プログラム
研究者派遣プログラム

英文報告書

提出日：平成26年10月15日

1. 渡航者 (日本語)			
氏名	高垣直尚	採択年度	平成25年度
部局	工学研究科	電話	
職名	助教	メール	
研究課題名	大気・海洋間の輸送現象のモデル化		
海外渡航期間	平成25年9月16日～平成26年9月15日		
渡航先 (英語表記)	国名：アメリカ合衆国 大学等研究機関名：カリフォルニア大学サンディエゴ校スクリプス海洋研究所 研究室名等：海洋物理研究室 受入研究者名：Ken Melville		
2. 渡航の報告 (英文) 渡航先の研究環境、研究者との交流、研究発表の状況等、渡航中の滞在経験について英語(500～1000語)で記述して下さい。受入研究者と撮影した写真や研究発表で用いた図等について、可能な範囲で別添として提出して下さい。ページ数については増加してもかまいません。 この報告は、ジョン万プログラムの成果として、京都大学ホームページ(英文)などに掲載されることがあります。			
<p>The Scripps Institution of Oceanography (SIO), University of California, San Diego (UCSD), where I stayed as a visiting scholar of John Mung Program, Kyoto University, is the top or the second institution in the oceanographic field, and, therefore, I had very important opportunity for discussing about physical, chemical, and biological oceanography and talking and knowing about private life of American researchers at the laboratory and some parties held in the university. There are a lot of unique instruments in SIO, for examples, FLIP (FLoating Instrument Platform) and the Scripps pier. Unfortunately, I don't have the opportunity to board on FLIP, but I discussed how to use FLIP and problems on FLIP usage with my colleagues who attended on FLIP projects previously. For Scripps pier (330 m long and 7 m wide and located on 5 m water depth, see following picture), researchers in the laboratory (Professor Melville) everyday use the pier to check the new instruments prepared on the unmanned aerial vehicle (UAV) and marine vehicle (UMV) (e.g. scan eagle and wave glidar) and to maintain general instruments fixed on the pier. California state has a lot of piers for business and sightseeing (c.f. Huntington Beach Pier, Los Angeles), but the Scripps pier is used only for fundamental studies.</p> <p>During my oversea period, I joined three conferences of 2013 AGU (American Geophysical</p>			

Union) Fall Meeting, 2014 Ocean Science Meeting (OSM), and 2014 31th Conference on Hurricanes and Tropical Meteorology, and I presented about the air-sea momentum transfer and wind-wave shape at high wind speeds in Fall Meeting and OSM. Of course, I also discussed about new evidences in Scripps research with many researchers.

The study in my Scripps period is to analyze the airborne data, which is taken at Mexican shores and oceans by the aircraft C130 on GOTEX project (Gulf of Tehuantepec EXperiment), for estimating the effects of wind shear and fetch on air-sea heat (enthalpy) flux and production rate of sea spray aerosols ranging of the diameter from 0.01 μm to 640 μm . I mainly conduct laboratory experiments in Kyoto University, and so it is the first time for me to see and analyze the field data. The big difference between laboratory and field data is whether I can measure again under same environmental condition or not. In case of laboratory experiment, I and my students measure wind, temperature, and pressure many times. On the other hands, I cannot measure field observation data again. And so, when I analyze those field data in Scripps, I must ask other researchers and technicians, who measured those data previously, to know the reliabilities and problems of observation instruments many times. I believe that the experience for analyzing field observation data enhances my potential for researches.

