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学年または身分: Ph.D. 4th year

研鑽タイトル Research Title

Flood impact assessment with nighttime light remote sensing data

渡航先 Visited Institution

University of Arizona; Stanford University

渡航期間 Traveling Period

University of Arizona: 27th May to 4th June

Stanford University: 5th June to 10th June

研修概要 Research outline

My research focuses on assessing the impact of flooding on human daily life using high-quality nighttime light (NTL) remote sensing data. Flooding stands as one of the most disastrous natural hazards worldwide, resulting in impacts, such as power outages, business interruptions, and disruptions to daily activities. Assessing the global impact of flooding is vital for international decision-making on disaster adaptation and relief policies, aimed at minimizing the loss of lives and assets. However, existing methods exhibit shortcomings such as inefficiency, low accuracy, and a lack of information concerning daily human activities. NTL data presents itself as a powerful tool to bridge these gaps. The flood impact information derived from NTL has the potential to serve as a critical tool for emergency response, policy formulation, and decision-making, benefiting governmental bodies and insurance companies alike. Through this comprehensive analysis, we aim to deepen our understanding of the intricate relationship between floods and daily human life on a global scale.

研修先について About the laboratory visited

I spent 9 days at the University of Arizona from May 27th to June 4th. During the first two days, I had personal discussions with Prof. Beth about my ongoing research on flood impact analysis using nighttime light remote sensing data. Subsequently, I also discussed my research with one of Prof. Beth's students who is interested in a similar topic. I explained the dataset I generated, and she expressed interest in using it. We plan to stay in touch and discuss our research further.

On Friday, I joined their group meeting and presented my research to the lab members. They were very interested in my topic and introduced their own research to me, sparking ideas for potential collaborations. The following Monday, I participated in a joint meeting with Prof. Beth, one of her students, and researchers from other universities and institutions to discuss a collaborative paper. This meeting was a great opportunity to connect with other excellent researchers. On Tuesday, we had another personal meeting focused on further collaboration and improving my current research to align with a target journal.

After my time at the University of Arizona, I attended the Natural Capital Symposium at Stanford University. There, I met many researchers from universities and institutions worldwide who are studying ecology and the economy. The talks were very interesting, and I gained valuable knowledge about translating natural indices to economic indices, which is my next research step. I also engaged in discussions with researchers and students from Stanford University about their views on climate change and flood impact.

Additionally, I invited Dr. Christopher, a postdoctoral researcher at Stanford University studying climate change and its impact on GDP growth, for a discussion. I sought his advice on economic models and result validations. He shared his experience and insights on learning economic models independently

研修内容 What you learned

The discussions with the outstanding researchers I met during this visit provided numerous valuable research ideas and inspired solutions to challenges in my current research. It was an enriching experience, and I was pleased to see their interest in my work, which has greatly encouraged me to continue. I was invited to co-author a research paper with Prof. Beth's student and extended invitations to some researchers I met to co-author my work, as their feedback has been instrumental in improving my research. Future collaborations are definitely in the pipeline.

I am deeply grateful for the opportunity to visit the US, supported by UTEC. This visit has not only enhanced my research but also broadened my perspective. I gained insight into the structure of US universities, the management of their laboratories, and the dynamic between students and supervisors. The US is home to many excellent researchers and abundant research resources. For instance, Stanford University, a top-tier institution, hosts numerous workshops and meetings annually, attracting researchers worldwide. This environment facilitates easy interaction with renowned researchers. I was particularly impressed by the innovative approaches of the researchers I met and their ability to translate research outcomes into solutions for societal issues. This is something I aim to emulate to increase productivity and societal impact in my work.

Overall, the visit has significantly advanced my research and opened doors for future collaborations. It also provided me with a broader understanding of universities and laboratories in other countries. This experience has been both memorable and beneficial, and I am truly thankful to UTEC for offering me this opportunity.

研修先で特に印象に残ったこと The most impressive thing

One of the most impressive aspects of my visit was the personal discussions with Prof. Beth. I received incredibly helpful feedback from her, especially on data management and potential analysis directions. She provided valuable insights on organizing and analyzing my data, which has significantly improved the quality of my research. Prof. Beth's encouragement to continue my current research and her emphasis on its societal contributions were particularly motivating.

During our discussions, she shared her extensive research experiences, including the process and challenges she faced while publishing in prestigious journals like Nature. Hearing about her journey and the strategies she employed to overcome obstacles was both inspiring and educational. Her success story gave me a clearer understanding of the dedication and perseverance required to achieve high-impact research outcomes. The ideas and techniques she discussed have sparked new directions for my research, and I am eager to implement them.

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