2019 年度 IASPEI 関連国際学術大会渡航助成金成果報告書

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With my deep appreciation to the traveling support from the Seismological Society of Japan, I attended the 27th IUGG 2019 General Assembly, Canada, on 12 to 14 July. I had two oral presentations on the session of Tsunamis (IASPEI, IAPSO, IAVCEI). It is very important for a researcher to join an international conference and exchange their knowledge and experiences. I presented my researches to tsunami scientists from many different countries and had great discussions with them.

The tsunami session consisted of 39 oral presentations and 18 posters including source study, early warning, methodology, case studies, and social aspects. I presented two topics on the session: the 2018 Indonesian Sulawesi (Palu) earthquake and the 1960 Chile (Valdivia) earthquake. For the 2018 Sulawesi earthquake, I discussed the source of this event. We applied the InSAR data and tsunami waveform to reconstruct the slip distribution of the earthquake. Our model successfully reconstructed the surface deformation and the tsunami waveform and revealed a large asperity located at the bay. Our study aroused some questions and discussions. Prof. Tinti had a question about the waveform comparison on the 200km-far station Mamuju from our source model. Prof. Titov was curious about the inundation from our model compared to the measurements of field surveys. Prof. Tanioka suggested that we can compare our model to the moment tensor of the CMT solution. For the 1960 Chile earthquake, we applied tsunami observations around the entire Pacific Ocean, from America to Asia, to estimate the tsunami and earthquake source jointly with the geodetic measurements from USGS. The slip distribution was successfully reconstructed with all tsunami waveforms and geodetic data greatly reproduced. Although this study has been published in JGR Solid Earth, my presentation still attracted many discussions. Prof. Okal was interested in the misfit differences between different assumed rake angles. Prof. Marchuk commented that the bathymetry resolution may affect the travel time. I acquired many valuable suggestions from those questions and comments that will help me to improve my current study.

There were many talks about 2018 Sulawesi earthquake because large tsunami struck the bay after this strike-slip fault earthquake. Some studies focus on the landslides, but some of them explained the tsunami waveforms only by the earthquake. The study performed by Dr. Gusman showed similar estimation to our result by a different approach. Other than that, many presentations were important to my studies. Some interesting ideas inspired me a new research direction.

I attended the opening ceremony of the IASPEI. With the introduction and speeches of many important people, I learned the history of IASPEI and the importance of this association. The history of earthquakes and the development of earth sciences in Montreal were introduced by Prof. Adams. Congratulate to Prof. Satake who will become the next president of IASPEI.

This is my first time attending IUGG and to Canada. Although it is a long conference (11 days), the scale is smaller to another important international earth sciences conference AGU. The venue is also smaller which makes people easily meet each other and join different sessions. Montreal is a beautiful city with great weather and beautiful streets. Although there is a French-speaking area, most people speak English fluently. We can easily travel there without problems.

I met many tsunami scientists, seismologists, and geophysicists during this conference and had many communications with them. I showed my current studies to them and learned something from their feedbacks. I also attained many valuable suggestions and comments for my presentations and researches after sessions. I widened my vision and advanced my research knowledge through the research exchange activities. I am grateful to the Seismological Society of Japan for supporting me to join this important conference.