Report

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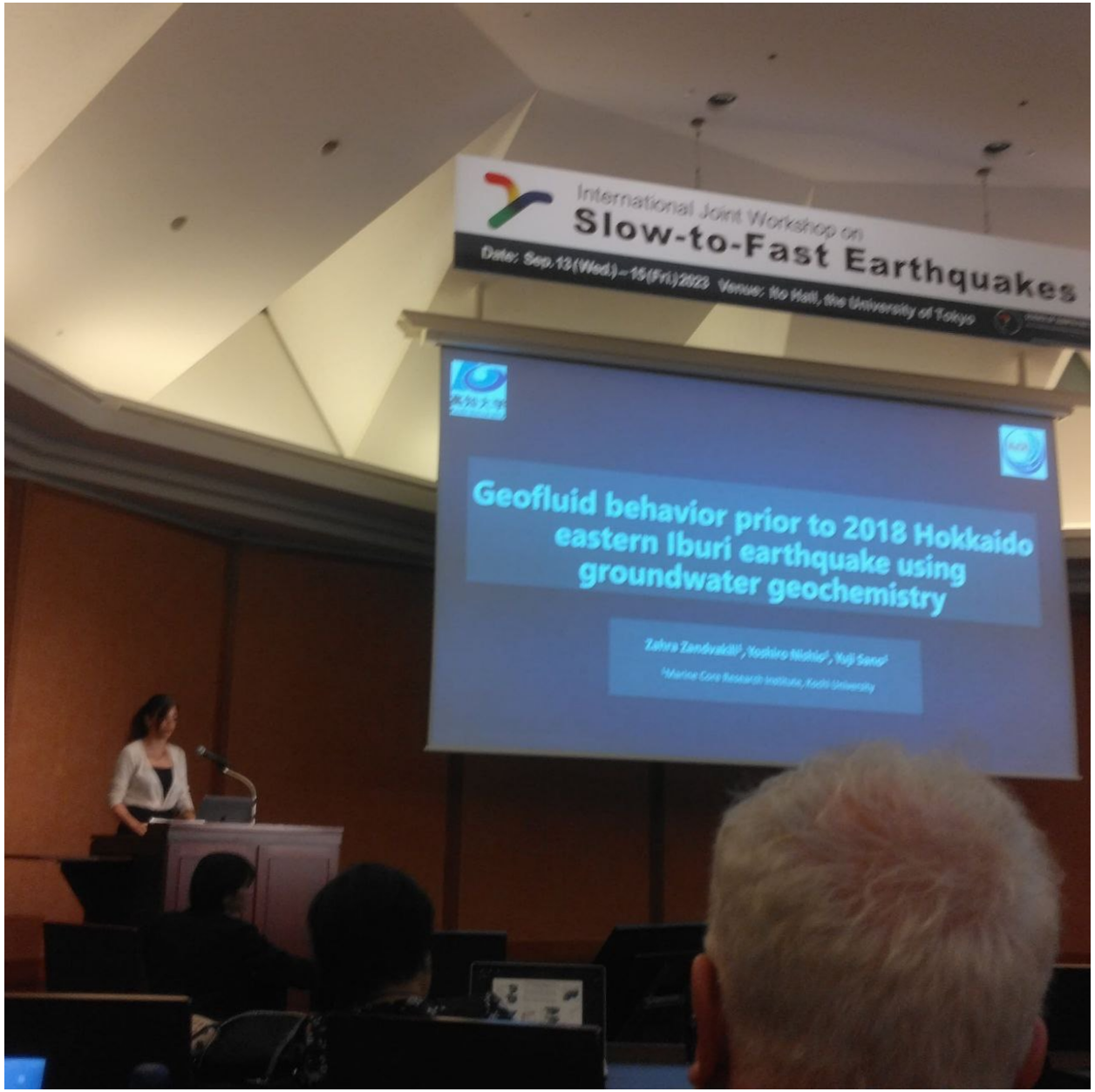
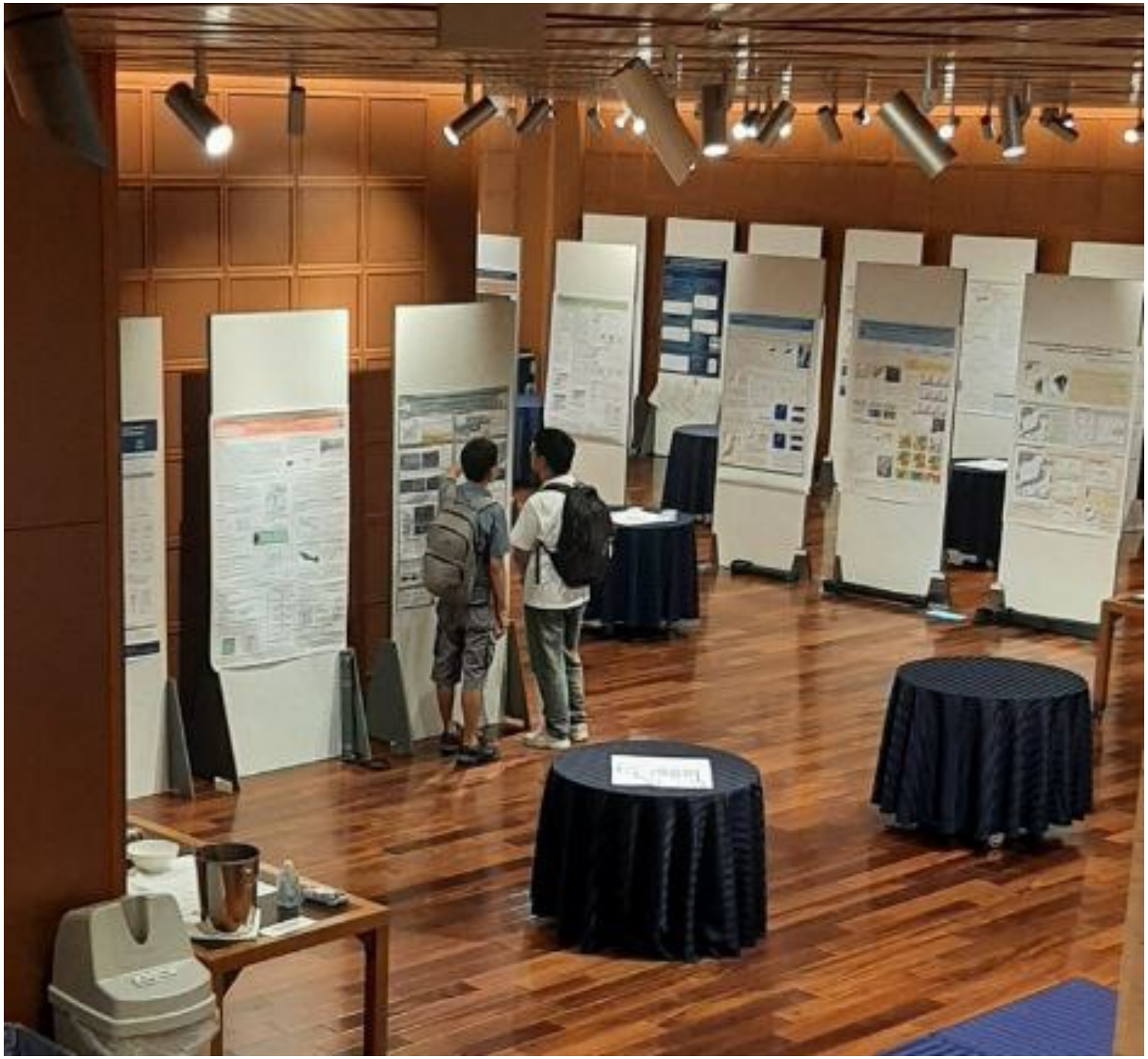
The conference started on September 13th. My presentation took place on that day, along with other researchers who were presenting their work conducted in the Hokkaido region. I had a presentation regarding the geochemistry anomaly of groundwater before the 2018 Hokkaido eastern Iburi earthquake titled "**Geofluid behavior prior to 2018 Hokkaido eastern Iburi earthquake using groundwater geochemistry**". I Used the same samples, Sano et al.2020 has already reported anomaly in hydrogen, oxygen, and carbon isotopic values several months before the Eastern Iburi earthquake at the Uenae site. Sano et al. (2020) indicated that CO_2 influx into groundwater may have occurred based on the observed decrease in 13C isotopic ratio and 14C data. I also observed significant decrease in the Na/K ratio at the same time of changes in hydrogen, oxygen, and carbon isotopic values before earthquake which Sano et al, reported in the nearest site to the epicenter. Although the decrease in the Na/K ratio can be explained by the contribution of deep-derived fluids, the result from analyzing of Li and Sr isotope in this study indicate that the decrease in the Na/K ratio in the Uenae site was not related to ascending of the deep-seated fluids. Therefore, the pre-earthquake decrease in the Na/K ratio observed in this study can also be explained by the influx of deep-derived, waterless CO_2 into the groundwater. The theory of Sano et al., that pointed out that the changes in carbon isotopic values that occurred before the earthquake at the Uenae site, caused by migration of CO_2 from injection site, is supported by the results of this study in terms of the absence of deep-derived fluids as well.



After the presentation, I received general comments about my research, but one comment specifically addressed the relationship between geochemical anomalies and the types of stress present in the region. I was advised to consider how chemical elements behave under different types of stress, including dilation and compression, as this could be crucial for interpreting my work.
The variations in the concentration of chemical elements may indeed be related to regional stress factors and may fluctuate depending on the type of stress present. Therefore, in addition to accounting for changes in chemical composition due to mixing with other fluids or gases, it's essential to take into account the influence of regional stress factors in our analysis.



During the poster session, I also learned about some technical terms that I needed to know for my next project related to long-term SSE (slow slip events). I was able to enhance my connections by engaging in conversations with other researchers and professors during the poster session.

In the breakout session, we discussed the missing components in earthquake prediction, the application of AI in slow earthquake research, and the materials or structures required for the study of slow earthquakes. The result of our conversation during the breakout session was to classify the available data for easier access.

This conference provided an excellent opportunity for me to enhance my knowledge of deep earthquake science and expand my network with other researchers and professors, potentially leading to valuable opportunities in the future.