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（学校用）

様式 A-1
(FY2025)

2025 年　11 月　2 日

サイエンス・ダイアログ　実施報告書

1. 学校名:滋賀県立彦根東高等学校

2. 講師氏名:　Dr. Junbeom JO

3. 講義補助者氏名:　寺下　大智　様

4. 実施日時:　2025 年　10 月　30 日（木）　15:30　～　17:00

5. 参加生徒:　1 年生　38 人、　年生　人、　年生　人（合計　38　人）
   備考:GS コースの生徒

6. 講義題目:気候変動の影響を考慮した沿岸域の複合氾濫統合評価モデル開発

7. 講義概要:今後日本に大きな台風が来た時に、どのような影響・災害被害を受けるかを予測し、被害を最小限に抑えるためにどのような対策を講じるか

8. 講義形式:
   □対面　・　□オンライン（どちらか選択ください。）
   1) 講義時間　70 分　質疑応答時間　20 分

   2) 講義方法（例:プロジェクター使用による講義、実験・実習の有無など）
      プロジェクター使用による講義

   3) 事前学習
      □有　・☑　無（どちらか選択ください。）
      使用教材:

9. その他特筆すべき事項:

For Web posting

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Form B-2
(FY2025)
Must be typed

Date（日付）
31/10/2025 （Date/Month/Year：日/月/年）

Activity Report -Science Dialogue Program-
（サイエンス・ダイアログ 実施報告書）

- Fellow's name（講師氏名）: Junbeom JO （ID No. P25055 ）

- Name and title of the lecture assistant（講義補助者の職・氏名）
修士2年・寺下 大智

- Participating school（学校名）: Hikone Higashi High School

- Date （実施日時）: 30/10/2025 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
Understanding Typhoon Disasters and Building a Resilient Future

- Lecture format（講義形式）:
◆☒Onsite ・ □Online (Please choose one.)（対面 ・ オンライン）（（どちらか選択ください。））
◆Lecture time（講義時間） 60 min（分）, Q&A time（質疑応答時間） 30 min（分）
◆Lecture style（ex.: used projector, conducted experiments）
（講義方法（例：プロジェクター使用による講義、実験・実習の有無など））
プロジェクター使用による講義

- Lecture summary（講義概要）: Please summarize your lecture within 200-500 words.

In this lecture, I introduced my research on natural disaster risk reduction, especially focusing on coastal flooding caused by typhoons. As a researcher at the Disaster Prevention Research Institute (DPRI) of Kyoto University, I specialize in understanding and modeling the risks associated with typhoon-induced coastal disasters in Japan.

We began with basic concepts such as disaster risk. Disaster risk is not simply about dangerous events. It arises when three elements are combined: hazard (such as a typhoon), exposure (people or infrastructure located in the affected area), and vulnerability (how unprepared or weak the area is). Understanding this framework helps us identify why disasters happen and how we can reduce their impacts.

Next, I explained the impacts of recent typhoons in Japan, particularly Typhoon Jebi in 2018. This typhoon caused severe flooding at Kansai International Airport, even though the airport was protected by a seawall. The damage occurred due to a combination of wave overtopping, backflow through drainage pipes, and strong winds. This type of flooding, caused by multiple factors interacting together, is called compound flooding.

To better understand and predict such events, I developed a computational model that combines storm surge, wave action, drainage overflow, and backflow into a single simulation. I validated this model using real data from Typhoon Jebi, comparing the calculated flood depths with actual flood measurements from 14 locations around the airport.

I also shared my recent research using Typhoon Faxai (2019) in Tokyo Bay. In this study, I analyzed how changes in typhoon intensity affect economic damage. I simulated 24 typhoon scenarios and found that small increases in typhoon intensity could cause a large increase in flood damage. We also identified a tipping point, a specific surge height beyond which the economic loss grows rapidly.

I concluded the lecture by emphasizing that research should not just stay in the laboratory. It should be used in real life to protect people and improve society.

◆Other noteworthy information（その他特筆すべき事項）:

- Impressions and comments from the lecture assistant（講義補助者の方から、本プログラムに対する意見・感想等がありましたら、お願いいたします。）:

It was a great presentation to acquaint high schools with the latest research on typhoons.
There were many questions from the high school students, and it was a meaningful event.