

**Mathematics and Physics Unit “Multiscale Analysis,
Modelling and Simulation” , Top Global University Project,
Waseda University
Report on Study Abroad
Name : Kenta Tomioka
Date : March, 2024**

1. Destination

Pisa University, Italy.

2. Dates of Stay

From 28 September 2023 to 12 March 2024 (167 days).

Departure from Japan : 27 September 2023.

Arrival to Japan : 13 March 2024.

3. Purpose

To visit Professor Vladimir Simeonov Gueorguiev and to study the nonlinear differential equations (especially, nonlinear dispersive equations).

4. Main Host Professor

Professor Vladimir Simeonov Gueorguiev (Pisa University).

5. Research Activity

Kenta Tomioka, The vanishing dispersion limit of the Schrödinger-improved Boussinesq system and its first approximation, A three-day Dispersive Meeting in Pisa, 08-10 February 2024 (Italian time), Pisa University (Italy), 10 February 2024 (Italian time).

(Web site) https://pagine.dm.unipi.it/forcella/dispersive_days_02_2024.html

“The research topic is to analyze nonlinear dispersive equations (or systems). For example, we are interested in the nonlinear Schrödinger equation, the Zakharov system and the Klein-Gordon-Schrödinger system. Especially, we studied the behavior (scattering problems or stability problems or blow up problems) of these solutions.” ([1]).

We have some results of our research partially.

6. Other comments

I appreciate Professor Tohru Ozawa and Professor Vladimir Simeonov Gueorguiev since I could get the chances to study our research topics in Pisa University by the Cotutelle Program. Moreover, I appreciate Ms. Yukari Ishizaki, Waseda University and Japan society for the promotion of science since they helped and supported me. Especially, first trip ([1]) was supported by Waseda University and second trip (this trip) was supported by Japan society for the promotion of science (DC2) mainly. Finally, I appreciate everyone related to the Cotutelle Program and everyone whom I met.

7. Remarks

I refer to my information of the web site mainly.

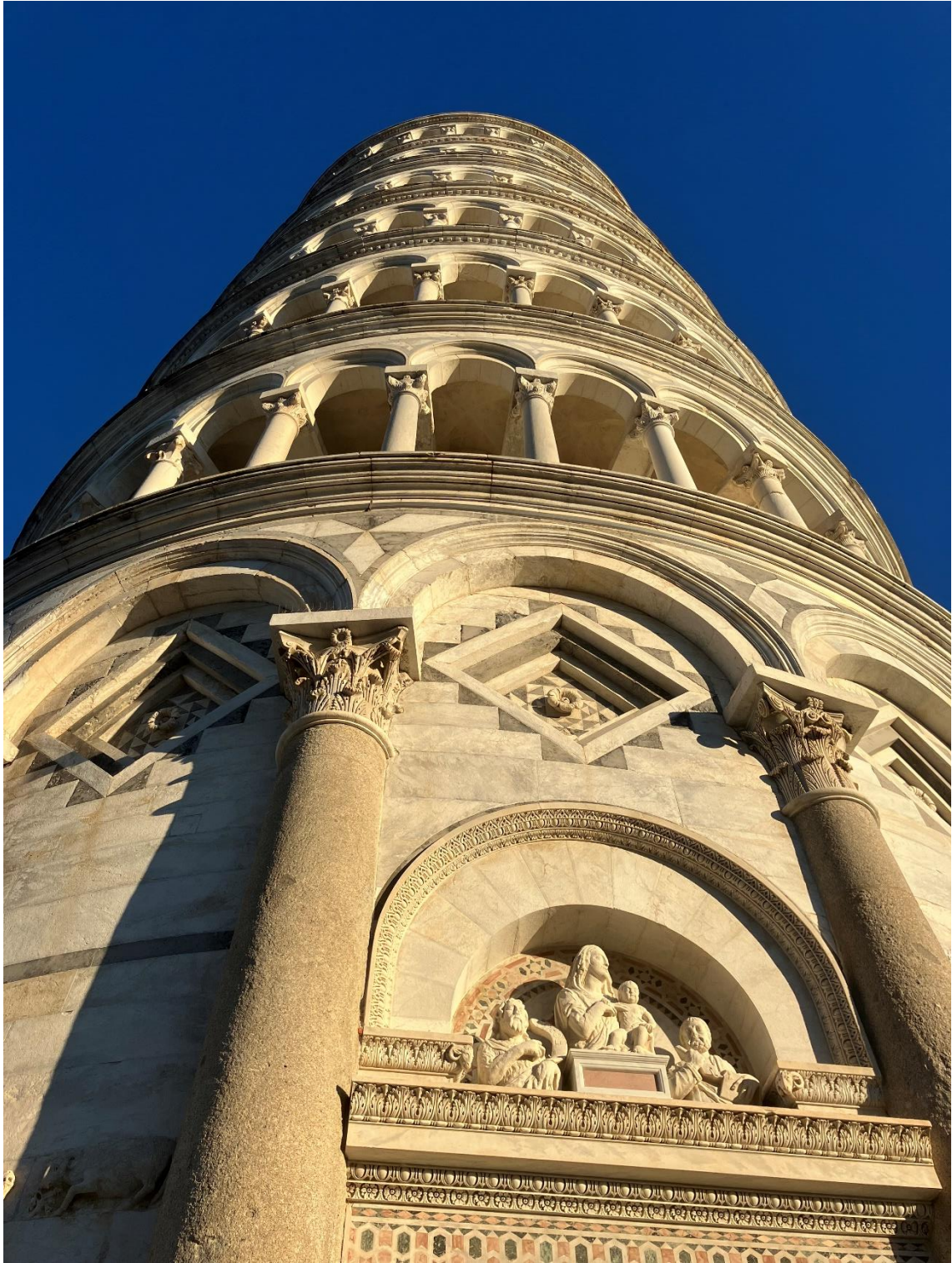
(Japanese) <https://www.waseda.jp/fsci/mathphys/activity/student>

(English) <https://www.waseda.jp/fsci/mathphys/en/activity/student>

Especially, I refer to [1] Report on Study Abroad.

8. Pictures

I show some pictures. I appreciate someone that help to take pictures. The information of pictures is based on my memory mainly.



Tower of Pisa



Professor Vladimir Simeonov Gueorguiev and me



Landscape of Pisa 1



Landscape of Pisa 2



Landscape of Pisa 3



Pizza 1



Pizza 2



Pasta