

2025年度 核融合科学研究所スクーリング・ネットワーキング事業
実施報告書

人的交流			
実施責任者	所属機関・部局 : ██████████ ██████████	職名・学年 : PhD student, D2	氏名 : Di Matteo Donato
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派遣期間	2026年 01月 18日 ~ 2026年 01月 30日 (12日間)		
交流先機関及び 受入責任者	機関等名 : - Institute of Plasma Physics, Prague, Czech Republic - Max Planck Institute for Plasma Physics, Garching, Germany 受入責任者名 : ██████████ E-mail : ██████████		
得られた成果等 (行数は適宜増や してください)	<p>1. 本事業によって得られた成果のうち特筆すべき事項</p> <p>In Prague, I had many discussions about Ball-pen probe with Dr. ██████████ and his collaborator Dr. ██████████. There is now a strong potential for long-term collaboration with IPP institute of Prague. Thanks to their guidance, I gained a more mature knowledge of the Ball-pen probe operation and a more solid interpretation of the ball-pen probe data on PANTA. I learned how to look at the Ball-pen probe type data from the point of view of a fusion-related device and higher temperature devices in general. Also, I know now how to logically compare data of high-temperature and low-temperature devices.</p> <p>In Garching, I had the chance to visit the laboratories where the tokamak ASDEX-U is located and talk to some of the researchers who usually work on it. It was very educating to see how different diagnostics are implemented on such a device. Most importantly, I now have an image of how probes are managed by manipulators in harsh environments produced by high-temperature devices. Ball-pen probes are also used in ASDEX-U, therefore it is a common topic from which new collaborations can develop with IPP institute of Garching.</p> <p>2. その成果が核融合分野の人材育成に果たした (果たすと期待される) 事項</p> <p>Having met such high-level researchers who regularly work with fusion-related devices gave me strong confidence and motivation to keep pursuing nuclear fusion. Realizing to be part of an international scientific community is of great inspiration. Also, while visiting Prague university plasma laboratories, I randomly met another PhD student who I had met for the first time at the 2024 ITER international school in Nagoya. I think this is another of the great strengths of the nuclear fusion community.</p> <p>3. 交流先研究者 (グループ) の熱意, 態度, 研究レベル等に関して参考となる事項</p>		

Both groups were very enthusiastic to meet us and start new long-term collaboration. Their attitude towards research was impressive and it's been clear by also looking at the good relationship between senior researchers and younger students.

In particular, Dr. [REDACTED] and Dr. [REDACTED] were enthusiastic of our results with Ball-pen probes on PANTA. They want to join our research and will be very happy to travel to Kyushu University for future joint experimental campaigns, as the linear device PANTA is characterized by very special plasma conditions where Ball-pen probe is being used for the first time. Their high-level research ability and knowledge in probe diagnostics can actually help us in finding new physics in PANTA.

4. 今後改善すべき点について参考となる事項

I don't feel like the program itself needs improvements, because it gives enough freedom in the planning phase and funding are enough.

Regarding myself, I feel like I can always improve the output of this kind of collaborations by studying and improving my skills first. My goal is to keep improving my skills, such that every discussion with any other researcher may lead to new concrete results.

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5. 本年度に引き続き次年度も同じ目的（あるいはそれに準ずる目的）で派遣を計画している場合、本年度の派遣と異なる点及びその理由

All the new knowledge and methods I learned during these two weeks program have still to be implemented into my research, and I feel very optimistic. This means that, next year, the new collaboration will focus on deeper physics topics that can be explored by the use of probes and ball-pen probe in particular. Also, there is the chance that, if I can get access again to this funding, I could start some actual experimental activity on European devices, which could straighten even more the relationship with Japan fusion community.

6. 交流の概要、特に重要な課題などについて

It's an extremely useful program, which helps junior researchers like me to start diving into real world situations, so improving the skills and potential of the entire national Japanese community as a whole.

備考	
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