

I. Information

Name: NEETU GARG

First name: NEETU

Home Institution: National Institute of Technology Calicut India

Total duration of the stay: 02 June 2025 to 26 July 2025

Host colleague: Dr. Kai Diethelm, Schweinfurt, Germany

II. Activity Report

During my research stay, we worked on some fractional differential equations. We worked on the time-fractional generalized Burgers equation using $L_2 - 1_\sigma$ approach in time variable with exponential B-spline method in space variable. The exponential B-spline method is an efficient method to solve fractional differential equations numerically. We developed stability analysis for the proposed scheme. Numerical experiments are done to validate the theoretical results. A comparative analysis is also derived to indicate the efficiency of the proposed method. We wish to write this work in the form of a research paper and get it published.

In future, we wish to apply for Indo-German project. I am attaching herewith few photos of me during my stay in Germany.

III. Feedbacks

I am sincerely grateful for this wonderful opportunity, which marks a significant milestone in my research career. Preparing for the course was a rewarding experience, and I truly appreciate being entrusted with the responsibility to contribute to the CIMPA program.

However, I regret to let you know that the online course I offered as part of the CIMPA program was not advertised adequately. Despite my thorough preparation and enthusiasm to deliver the course, I was disappointed by the very low attendance.

I believe that with better visibility or outreach, more participants could have benefited from the content I worked hard to prepare.

A particularly valuable aspect of the program was the opportunity to interact with the Prof. Diethelm from THWS Schweinfurt, Germany. The discussions provided new directions and insights, which I intend to incorporate into my future research. The fellowship itself has broadened my perspective and deepened my understanding of the subject area.

Thank you again for the opportunity. I remain enthusiastic about continued collaboration and future contributions to the program.



From left: Dr. Kai Diethelm (THWS Schweinfurt), Dr. Neetu Garg (NIT Calicut) and Dr. Peter Kloeden (Goethe University Frankfurt)