Division of Mathematical and Physical Sciences	Research field	Analysis	Lab. ID MP03
Laboratory web site			

Research subjects

Differential equations are mathematical formulas that describe the relation between varying quantities, and they have their origins when Isaac Newton related momentum changes with forces. Nowadays, differential equations describe concepts in mathematics, such as geometric properties of figures, as well as various natural phenomena, such as physical laws, chemical reactions, and biological phenomena. The scope of research is vast, and in addition to developing general theories applicable to many equations, many researchers are exploring individual equations in-depth. Our current research fields include the existence of solutions to nonlinear elliptic equations, blow-up phenomena, differential equations on the complex domain, in particular, Painlevé equations, and asymptotic behavior of solutions and Stokes phenomena in singular points and singular perturbation problems for differential equations.

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

In the ″Analysis″ research group, the faculty members pursue their research according to their own interests while stimulating each other. Therefore, students are guided by one faculty member as a principal advisor. To broaden your vision, you are encouraged to participate in seminars of other staff members and attend the “Kanazawa Analysis Seminar” “Differential Equations and Data Science Seminar” co-organized by our group, the Applied Computational Mathematics group, and Mathematical Modeling and Analysis group. In the first year of the master course, you read standard textbooks in your research fields and give presentations at weekly seminars. In the second year, you decide on a research topic and start your research under the direction of your advisor. The doctor course students pursue their research, and when they have achieved a certain level of results, they publish scientific papers.

Daily life in the laboratory, etc.

Graduate students are assigned a graduate student room, with one room for at most every six students. Personal working desks and lockers are equipped in each room. A printer (wireless monochrome laser multifunction machine) is also available in the room. Students of the same adviser are generally assigned to the same room, but sometimes they share a room with students from other fields. You can use your office and equipment there at any time. You may have to prepare your presentation for the seminar until late at night there, but we are sure that your classmate, especially those in the same room, will give you good support.

Message or comments by the laboratory faculty staffs

Studying mathematics and doing research in mathematics is not an easy task. The same is true for faculty members. However, by noticing just a few things, you may feel that your chaotic thoughts have cleared up. You may discover just a few of them. We hope to share your discovery in the seminar after you have thought it out. We are sure that such an experience will be helpful in many occupations. Our graduates are working as teachers at high schools, office workers, researchers, etc. We hope you consider thoroughly and flexibly, as you did in studying mathematics, how you can contribute to society.

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