

Division of Mathematical and Physical Sciences	Research field	Complex Analysis	Lab. ID MP03
Laboratory web site			
Research subjects			
<p>Complex analysis is the branch of mathematics which investigates functions of complex numbers. It is useful in many branches of mathematics, including geometry, number theory; as well as in physics and also in engineering fields. Primary research interest is in the theory of minimal surfaces, complex manifolds and differential equations in the complex domain. Topics of current research include value distribution theory of the Gauss maps of immersed surfaces in three-dimensional space forms, the Kobayashi hyperbolicity of complex manifolds, Painleve equations.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>Master course: The first year students learn about complex analysis from standard books. The second year students choose their research field and read research papers related the field. They do their own research and write their master theses.</p> <p>Doctor course: Students will be trained to conduct their research independently as well as acquiring high expertise. As for foreign students, all activities or correspondences in this laboratory are done in English.</p>			
Daily life in the laboratory, etc.			
<p>In mathematics course, personal working desk and space is available for every student. Also the PC and printer can be used for students in the laboratory room. Students in our laboratory have seminar once a week in general. They study their own research subject by themselves and prepare the next seminar at any other time in the week. In our laboratory, some parties will be held throughout the year.</p>			
Message or comments by the laboratory faculty staffs			
<p>In our laboratory, students are encouraged to go for outer activities, for example, to participate research workshops and international conferences. Almost all master graduates take occupation as junior or high school teachers. Complex analysis is one of the most beautiful areas of mathematics at the same time it is an important and powerful tool in science and engineering. However it is not easy to understand. There is no royal road to complex analysis. Good luck!</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2017.3	On some construction of complete minimal surfaces in Euclidean 3-space		
2017.3	Nevanlinna theory for meromorphic functions of one complex variable		
2016.3	On a geometric interpretation of the number of exceptional values of the Gauss map of complete minimal surfaces in Euclidean 4-space		
2015.3	On the Brody theorem for compact hyperbolic manifolds		
2015.3	On holomorphic curvatures of the Carathéodory metric and Kobayashi metric		
2014.3	On the existence of a proper holomorphic map between the generalized complex ellipsoids		
2014.3	On some proper holomorphic map between the circular domains and its injectivity		
2014.3	On the localization of holomorphic automorphisms between the complex n-dimensional unit ball		
2014.3	On proper holomorphic automorphisms between the complex n-dimensional unit ball		
2013.9	On the regularity of the Riemann mapping function		
2013.3	On the regularity of the Riemann mapping function		
2013.3	Kobayashi hyperbolicity of complex manifolds		
Recent Doctoral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
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