

Division of Environmental Design	Research field	Earth Sphere Environmental Engineering	Lab. ID ED04
Laboratory web site			
Research subjects			
<p>Research topics are mainly divided into two categories; Foundation engineering and Applied mechanics. As for former ones, experimental and numerical studies on pile foundations are rigorously conducted, such as mechanism of bearing capacity of a single pile subject to vertical and combined loads, estimation of the ultimate capacity of piles by dynamic loading test, bearing capacity characteristics of group piles / piled raft foundations subject to combined loads. As latter ones, theoretical investigations and development numerical codes on the ultimate state of geo-structures and foundation structures are conducted, such as development of simplified methods to evaluate the ultimate capacity of underground / foundation structures, development of rigid-plastic finite element method.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>First graders in master course should attend various classes to widen views and knowledge on mechanical and civil engineering and to feed back their own research works. Second graders spend many hours in Labo to conduct their research work. All the graduate students in Labo will attend general seminar once a week to deepen common background of geotechnical engineering. In addition, every research group will hold a meeting at least once a week to master skills and know-hows which are necessary for research work. Detailed discussions on specific issues in research work will hold as necessary.</p>			
Daily life in the laboratory, etc.			
<p>A desk and a computer are prepared for every students. Student room is available for 24 hours. It is requested that every student will be present at the core time (during day time) to promote exchanges of ideas and communications. We have several foreign students. This means English is common language as a communication tool. We have drinking parties regularly to activate human relations and to refresh our spirit.</p>			
Message or comments by the laboratory faculty staffs			
<p>Every student has his / her own research topic. However, all the research works in Labo are related to each other in a broader sense. Please grow a wider view on geotechnical engineering and promote communications to stimulate each other. Exchange of ideas and teaching to other students are important to deepen the understanding. After graduation, many students will work at construction companies, consultant companies, railway companies, central government agencies and local municipalities.</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2017.3	Fundamental experiments of tunneling in sandy ground and its simulation		
2016.3	Static and dynamic load tests on model pile foundations in dry and saturated sand grounds		
2016.3	The Unified Handling of Velocity Constraint Conditions in the Formulation of Rigid Plastic Finite Element Method		
2015.9	Experimental Study on Reinforcement of Existing Bridge Pile Foundations		
2015.3	Treatment of periodic boundaries for the formulation of rigid plastic finite element method		
2015.3	Dispersion of material properties of soils obtained by various laboratory tests		
2013.3	One step time integration algorithm based on space and time discretized finite element method		
2013.3	Hybrid formulation of rigid plastic boundary value problems subject to deformation constraints		
2013.3	Optimization of material property distributions based on rigid plastic analysis		
Recent Doctoral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2017.3	Experimental and Numerical Study on Behaviours of Pile Group and Piled Raft Foundations Having Batter Piles Subjected to Combination of Vertical and Cyclic Horizontal Loading		
2013.9	Numerical and Experimental Studies on Dynamic Load Testing of Open-ended Pipe Piles and its Applications		
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