

Division of Geosciences and Civil Engineering	Research field	Hydraulic Engineering	Lab. ID
			GC03
Laboratory web site		http://hvd-eng.w3.kanazawa-u.ac.jp/	
Research subjects			
<p>1. Long-term and large scale morphological change in coastal areas (M. YUHI) The ongoing research projects include the following topics: inter-annual systematic migration of multiple sandbars, human-induced erosion of river-coastal watersheds, development of low-cost monitoring system using image processing, numerical modeling of waves, currents, and sediment transport in nearshore areas. Besides, numerical simulations for tsunami propagation and run-up have been conducted.</p> <p>2. Fluid-sediment-bed interactions for coastal and river structures (S. UMEDA) Toward understanding of the physical processes of interactions between wave, current, sediment bed around structures in coast and river, we have been studied the following subjects: initiation of sediment motion under waves, modeling of vortex ripple morphodynamics, scour and recovery process around structures, bed evolution in river and estuary. The collaborative investigation on coastal defense structures has been carried out to clarify the mitigation effects of wave barriers on inundation and forces induced by tsunami and waves.</p> <p>3. Effects of climate change on watercycle, data assimilation and ensemble numerical weather prediction (K. TANIGUCHI) For future river planning, we are investigating future variations in water cycle with global warming projections and numerical weather prediction model, distributed hydrological model, and inundation simulation model. At the same time, for improvement of precipitation prediction by numerical model, we are developing a data assimilation technique with satellite observation data.</p> <p>4. Improvement of Air-Sea-Wave coupled model and assessment of climate change on coastal disaster (J. NINOMIYA) Our research topics: Field observation of air-sea-wave, Development of bulk model for air-sea interaction, Improvement of numerical models, Analysis of coastal disaster, Future change of coastal hazards and environment of sea-wave.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>All of the graduate students join the weekly seminar of the research group of their supervisors. The graduate students present and discuss their research progress, related literature and textbooks in the seminar with other members. In addition, one to one meeting with their supervisor is conducted on the regular basis. The students also attend the monthly research seminar for the whole laboratory and other institutes.</p> <p>The graduate students are required to present their research at related international conferences. At the end of the 1st year of the master course, pre-defense is held; All the faculty members evaluate the research progress and provide various advise on future research plan. Doctor course students are also required to publish their research outcomes in peer-reviewed academic journals. For foreign students, all the activities above can be done in English.</p>			
Daily life in the laboratory, etc.			
<p>There are four staff members and about 30 students in our lab. Each staff member works on his/her own research themes, but members in other groups go field survey or make experiments together. Students can discuss all staff members and obtain knowledges from wide diciplines.</p> <p>We have several parties with all members in a year, and you can make friends with senior and junior student, foreign students, and sometimes you can also find diffrent aspects of professors.</p>			
Message or comments by the laboratory faculty staffs			
<p>The specialty of our lab's faculty staffs is meteorology, river, coast and ocean engineering concerned with hydrosphere and hydrologic circulation, so students are possible to discuss actively with each expert under very free feeling. Enjoy campus life with our faculty staffs and master course students. After graduation of master course, the rate of employment is 100%, and graduates are active as a public servant, an engineer of construction company and construction consultant. Many working doctor course students are also active.</p>			

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