



## **Workshop on Sediment Classification and Field Experiments at Khadakwasla Lake 15 to 19 May 2017**



Sediment classification in reservoirs, lakes, rivers and many other water systems is a critical component of the resource management efforts in these water bodies. Precise sediment classification is important for multiple stakeholders like the fresh water management authorities to initiate desiltation efforts for enhancing storage in the water bodies, flood management agencies to minimize spillages, underwater archaeology researchers to study the evolution of the layers, instrumentation engineers to understand sensor behaviour and the impact of the underwater medium, sonar operators specialist to enhance their deployment effectiveness and many more. The tropical region in the Indian sub-continent does have their limitations of sub-optimal performance of sonars due to medium fluctuations. The import of sophisticated technology has failed to give us good results as the medium fluctuations are characteristic of our local conditions and significant indigenous efforts are required to understand these limitations and improve our underwater

domain awareness. The proposed workshop attempts to address these issues with a comprehensive framework of modelling and simulation along with field validation.

### **About the Programme**

A one week workshop on sediment classification with field experiments has been planned by the Maritime Research Centre (MRC) and Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering and Technology, Baramati, for multi-disciplinary students at under graduate and post graduate level. The programme is a unique opportunity for students and faculty members to get exposed to modelling and simulation with ground validation. Sonar operations and deployment will be demonstrated along with data analysis and laboratory discussions. The programme will commence wef 15 May 2017 for duration of five days. The basics of sonar deployment and operations will be introduced along with challenges of tropical shallow water environment in the Indian Sub-continent. Modelling and simulation concepts will be presented with hands-on exposure for the participants to parallel computing. Field exposure at the Khadakwasla lake with real experimental deployment of sonars for data collection will be demonstrated. At the end the data analysis of the field data will be undertaken and discussed.

### **Programme Details**

The five day programme has been structured for a well rounded and fruitful interaction of the students to achieve the stated goals. The details are given below:

- Day – 1** Introduction to sonar operations and acoustics in the tropical waters.
- Day – 2** Modelling and simulations with parallel computing.
- Day – 3** Field experimental planning and exposure.
- Day – 4** Real experimental data collection.
- Day – 5** Data analysis and interpretation.

### **Resource Persons**

Dr(Cdr) Arnab Das, Director MRC will be the mentor for the entire workshop. He will coordinate all aspects of the workshop. The resource persons for conduct of the workshops will be as follows:

Sonar and Acoustic Signal Processing	-	Dr(Cdr) Arnab Das, Director MRC
Modelling and Simulations	-	Prof PSV Nataraj, IIT Mumbai
Field Experiment	-	M/S Fugro India Pvt Ltd.
Data Processing and Analysis	-	Ms.Jyoti Sadalge, Mr.Piyush Asolkar
Coordinator	-	Ms Sonal Nikam

### **Programme Output**

The students will be awarded a certificate on successful completion of the workshop. Students may continue their association with MRC even post completion of the

workshop. The workshop will expose the participants to real world problem solving with research ideas being formulated from the simulation and modelling framework to ground validation with handling of underwater instrumentation. Water resource management, underwater archaeology, marine ecosystem assessment, etc. are some of the most critical real world problems that need immediate attention and such workshops can facilitate meaningful interaction among young and energetic students with experienced practitioners. With more than two third of the world underwater and acoustic being the only means of generating underwater domain awareness, the importance of such a workshop, needs no reiterations.

### **Maritime Research Centre (MRC)**

The Maritime Research Centre (MRC) was started in Dec 2014 for supporting research in the maritime domain and also complement, the Indian Maritime Foundation (IMF) efforts in creating awareness on the said subject. The prime vision of the MRC would be to be a nodal research center on maritime issues and contribute as a think tank in the country on policy aspects. The potential stakeholders for the MRC could be categorized into four main categories:

- (a) **National Security Apparatus** These will include Navy, Coast Guard, Coastal Police, etc.
- (b) **Maritime Industries** All corporate entities engaged in maritime activities for commercial purposes. This includes shipping industry, oil and gas industry, undersea mining, etc.
- (c) **Marine Environment** Activists and regulatory agencies involved in the conservation of the marine eco-system and disaster management.
- (d) **Science and Research** Agencies involved in providing scientific and technical inputs in the maritime space.

The activities at the MRC will be focussed on industry relevant research that is able to contribute towards real world problem solving and also generate competent human resources for the growing maritime industry. The MRC will act as a meaningful interface between the academic institutes and the industry.

### **Venue**

The internship venue is Maritime museum and library, department of archaeology, Deccan college post graduate and research institute, Deccan college road, Yerawada, Pune, Maharashtra, 411006.

For more info about Maritime Research Centre please visit

[www.indianmaritimefoundation.org](http://www.indianmaritimefoundation.org)

### **Fees and Joining Details**

All the participants can join with a nominal registration fee of Rs. 3,000/- for students and Rs. 5,000/- for faculty and industry people. The google forms are available in the link below and registration amount can be deposited in the Indian Maritime Foundation account as given in the registration form.

**Registration Form:** <https://goo.gl/jh5QLn>