

## **Model Studies on Horizontal Multi-layer Mesh Free-floating Moored Pipe Breakwaters**

A.VITTAL HEGDE<sup>1</sup> and AMIT KUMAR<sup>2</sup>

<sup>1</sup>*Department of Applied Mechanics and Hydraulics*

<sup>2</sup>*National Institute of Technology Karnataka, Surathkal*

The west coast of India specially, Karnataka state coast is prone to intense erosion in the months of June, July and August due to high monsoon waves caused by Southwesterly winds. A number of places along the coast such as Sasihitlu, Kemmannu hoode, Maravanthe, Ullal-Kotepura etc., are subjected to coastal erosion and are losing valuable land, property, plantations and many a time human life too, due to the storm waves of the order of 4 to 5 m, attacking and eating out on the shores. The Gabion walls placed at Ullal were completely destroyed a few years back. The seawalls have been placed at many locations along the coast but have not been quite effective everywhere. In addition, at many places they have been damaged either seriously or completely. The floating pipe breakwaters are the best solutions in such cases as they are economic, durable, portable and easy to assemble, place at site. They may be dismantled or replaced in the surf zone as and when required in monsoon periods.

Model studies were undertaken to study the wave attenuation caused by Horizontal Multi-layer Mesh Freefloating moored pipe breakwaters with four pipe layers. The experiments were conducted in a regular wave flume for different wave periods, depths and incident wave heights. The study was conducted in regular wave flume of the department on a breakwater model. The paper presents the results of these model studies and show that Horizontal Multi-layer Mesh Free-floating Moored Pipe Breakwaters do attenuate the waves. There is considerable attenuation observed for the system.