

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Thesis Title: DIFFRACTION AND RADIATION OF LINEAR WATER WAVES
BY A VERTICAL COMPOUND POROUS CYLINDER OF VARIOUS
CONFIGURATION IN FINITE OCEAN DEPTH
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SHORT ABSTRACT

POROUS STRUCTURES REDUCE THE WAVELOAD AND WAVE RUN-UP ON COASTAL STRUCTURES. THESE STRUCTURES ARE VERY FLEXIBLE, REUSABLE AND CAN BE DEVELOP LOW COST WAVE ATTENUATION AND PROTECTION SYSTEMS. BY APPLYING BOUNDARY CONDITIONS AND AN APPROPRIATE MATCHING CONDITION, WHICH ENSURE THE CONTINUITY OF PRESSURE AND VELOCITY. FOR DIFFRACTION PROBLEMS, A SET OF VALUES OF HYDRODYNAMIC COEFFICIENT, MOMENT WAVE-RUN-UP ARE OBTAINED FOR DIFFERENT RADII, DIFFERENT DRAFT, DIFFERENT POROSITY. FOR RADIATION PROBLEMS, INVESTIGATION IS TAKEN UP IN ORDER TO EXAMINE THE INFLUENCE OF SUBMERGED DEPTH, RADII, POROUS COEFFICIENT AND WATER DEPTH ON ADDED MASS AND DAMPING COEFFICIENT.