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Turbulence characteristics of flow over two dimensional dunes in the presence of surface waves SATYA P. OJHA, BIJOY S. MAZUMDER, Indian Statistical Institute — This paper presents the results of an experimental study of flow over asymmetric wavy bottom boundary in the presence of surface waves carried out in a laboratory flume. The bottom of the flume is made wavy by fixing 12 asymmetric dunes of mean length 32 cm and mean height 3 cm. Four types of experiments were performed, one with current alone and three with combined wave-current flow with three different wave frequencies. A 3-D Micro ADV is used for turbulent velocity measurements. The effect of wave superposition is to increase flow resistance. Moreover, the apparent bottom roughness is found to increase with increasing wave frequency. The suspended sediment concentration is also found to change with addition of surface waves.

Satya P. Ojha
Indian Statistical Institute

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