Edge scour in current adjacent to stone covers

The present paper reports some early results of an experimental investigation of edge scour in currents. Two kinds of measurements are made (1) Particle Image Velocimetry (PIV) measurements of secondary currents that take place near a junction between the stone cover and the sand bed in a clear-water experiment; and (2) scour measurements in actual scour experiment in the live-bed regime. The early results indicate that edge scour in a steady current propagating in-line with a stone layer is caused by the combined action of two effects; (1) Primary flow and (2) Secondary flow. The primary flow stirs up the sediment and puts into suspension, and the secondary flow carries it away from the junction between the stone layer and the sand bed, resulting in a scour hole forming adjacent to the toe of the stone layer.

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Contributors: Petersen, T. U., Sumer, B. M., Meyer, K. E., Fredsøe, J., Christensen, E. D.
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