Rotating Solitary Wave during Liquid Drainage

MOHAMED FAYED, Concordia University, HAMID AIT ABDERRAHMANE, McGill University, GEORGIOS H. VATISTAS, HOI DICK NG, Concordia University — This work reports on the observation of a rotating solitary wave during liquid drainage from a cylindrical reservoir when shallow water conditions are reached. Using results obtained from a high-speed camera and image processing techniques, we discuss the mechanism leading to the formation of the solitary wave; and we examine its shape and speed as it propagates in two different cases, variable and constant water depths. The results were also compared to the KdV theory.

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