



Analytical investigation of the absorption of waves in a draining bathtub

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Perturbations in a draining vortex can be analytically described in terms of confluent Heun functions. Using the description of analogue models of the gravity in ideal fluids, we obtain analytically the length of absorption of acoustic waves of a draining vortex using confluent Heun functions. We compare our analytical results with a selection of numerical ones, obtaining excellent agreement.