

Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Application of geometric shock dynamics to a circular hydraulic jump¹ ASLAN KASIMOV, KAUST, RUBEN ROSALES, JOHN BUSH, MIT —
When a vertical jet of fluid strikes a horizontal plate, a circular hydraulic jump is often observed. Despite its apparent simplicity, the hydraulic jump exhibits features which are still poorly understood, the most striking of which is the instability of the circular shape with the resultant formation of stationary or spinning polygonal jumps. Here we investigate the phenomenon within the framework of shallow-water approximation by means of the geometric shock dynamics approach of Whitham. The theoretical predictions will be related with the available experimental observations.

¹Supported by NSF and KAUST GCR

Aslan Kasimov
KAUST

Date submitted: 06 Aug 2010

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