Polygonal hydraulic jump on microdecorated surfaces EMILIE
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SEAS, Harvard University — We report on the hydraulic jump resulting from the
impact of a water jet onto topographically patterned surfaces, i.e. arrays of cylin-
drical micron-size posts arranged on square or hexagonal lattices. By varying the
topographic features (height of the posts, lattice distance) and the jet properties (size
of the nozzle, flow rate), we obtain a variety of stable shapes including hexagons,
eight corner stars and circles. We rationalize our results by taking into account a
fluid velocity that depends on the orientation of the lattice.

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