

Abstract Submitted
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Liquid drop splashing on a textured surface LEI XU, University of Chicago — We have studied splashing of a liquid drop impacting on a dry solid surface. Previously we discovered that air causes the “corona” splashes seen on smooth surfaces and that surface roughness causes “prompt” splashing[1]. We can further control surface roughness by making textured surfaces of regular patterns. We manufactured arrays of pillars in a square lattice configuration on a flat surface. Surprisingly, the splashing on these surfaces shows four-fold symmetry – splashing predominantly along the diagonal. By varying the horizontal and vertical sizes of the pattern, we also found that the pillar height and the spacing between pillars are crucial factors for creating a splash. These discoveries could have practical applications in controlling the amount and direction of splashing.

[1] L. Xu, W. W. Zhang, and S. R. Nagel, *Phys. Rev. Lett.* **94**, 184505 1-4 (2005); L. Xu, L. Barcos, and S. R. Nagel to be published.

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