

## Electronic Supplementary Information

### Airflows generated by an impacting drop

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The Electronic Supplementary Information consists of two movies showing the airflows generated by a liquid drop impacting a dry substrate.

Movie 1:

Impact of a 1.25 mm radius water-ethanol drop at  $Re_{air} = 612$  on a smooth substrate. The liquid viscosity is  $\nu_{liq} = 2.4 \text{ mm}^2/\text{s}$ , the impact velocity is  $u_0 = 3.8 \text{ m/s}$  and the pressure is  $P = 101 \text{ kPa}$ .

Movie 2:

Impact of a 1.4 mm radius silicone oil drop at  $Re_{air} = 685$  on a rough substrate with root-mean-square roughness  $R_{rms} \approx 1 \text{ }\mu\text{m}$ . The liquid viscosity is  $\nu_{liq} = 20 \text{ mm}^2/\text{s}$ , the impact velocity is  $u_0 = 3.8 \text{ m/s}$  and the pressure is  $P = 101 \text{ kPa}$ .

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