Supporting Information for "Acoustic emissions of nearly steady and uniform granular flows: a proxy for flow dynamics and velocity fluctuations"

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Additional Supporting Information (Files uploaded separately)

1. Captions for Movies S1 to S4

Introduction Captions of the four supplementary Movies illustrating the type of experimental data used, obtained by fast camera during experimental flow.

Movie S1. High-speed camera footage from experiment 1, with slope angle $\theta = 16.5°$, gate height $h_g = 4.8$ cm, and flow depth h = 3.5 cm.

Movie S2. An excerpt of the footage in Movie 1, with playback in slow motion.

Movie S3. An illustration of Particle Tracking Velocimetry, using a processed excerpt of the footage from experiment 2, with slope angle $\theta = 16.5°$ and flow depth h = 3.6 cm. Particles are tracked, with circles indicating detected particles' centres and lines their tracked historic trajectories. From these trajectories, particle velocities can be extracted, from which both mean and fluctuating velocities may be calculated. The y-axis origin is taken to be at the bottom of the camera's field of view rather than the bottom of the flow.

Movie S4. An illustration of Correlation Image Velocimetry, using an excerpt of high-speed camera footage from experiment 2, with slope angle $\theta = 16.5°$ and flow depth h = 3.6 cm. Spatial correlations between subsequent frames are calculated to infer instanteous local mean particle velocities, as represented with red arrows.