Supplemental Material: Role of transverse displacements in the formation of subaqueous barchan dunes

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Head Tank

CCD camera

Settling tank

Valve

Pump

Flow meter
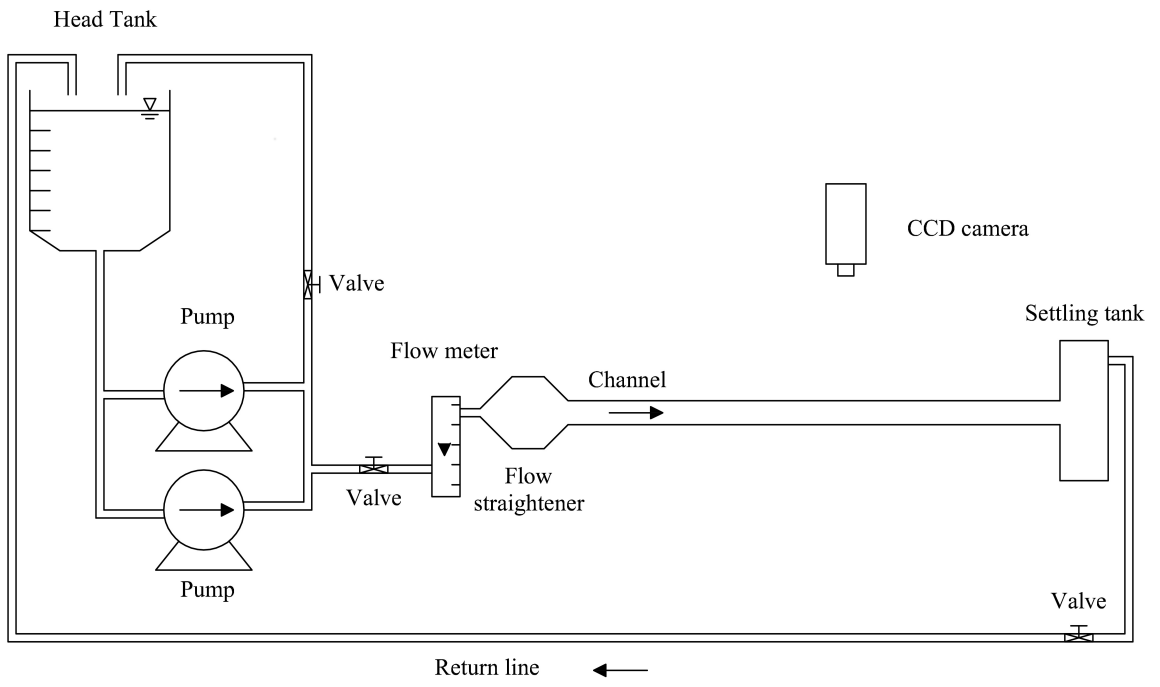
Channel

Valve

Flow
straightener
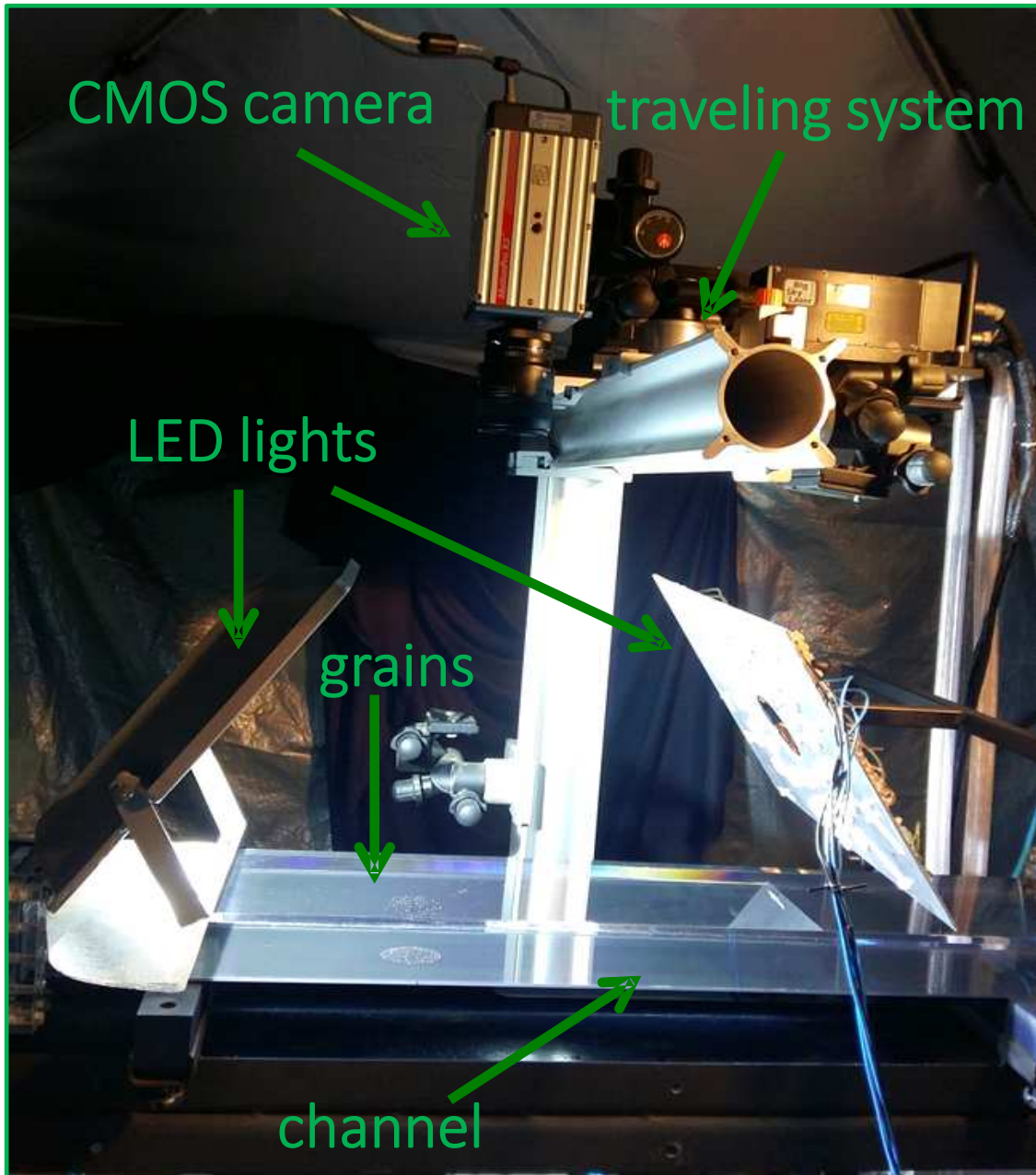
Pump

Valve

Return line

FIG. 1. Layout of the experimental device.

FIG. 2. Photograph of the test section.
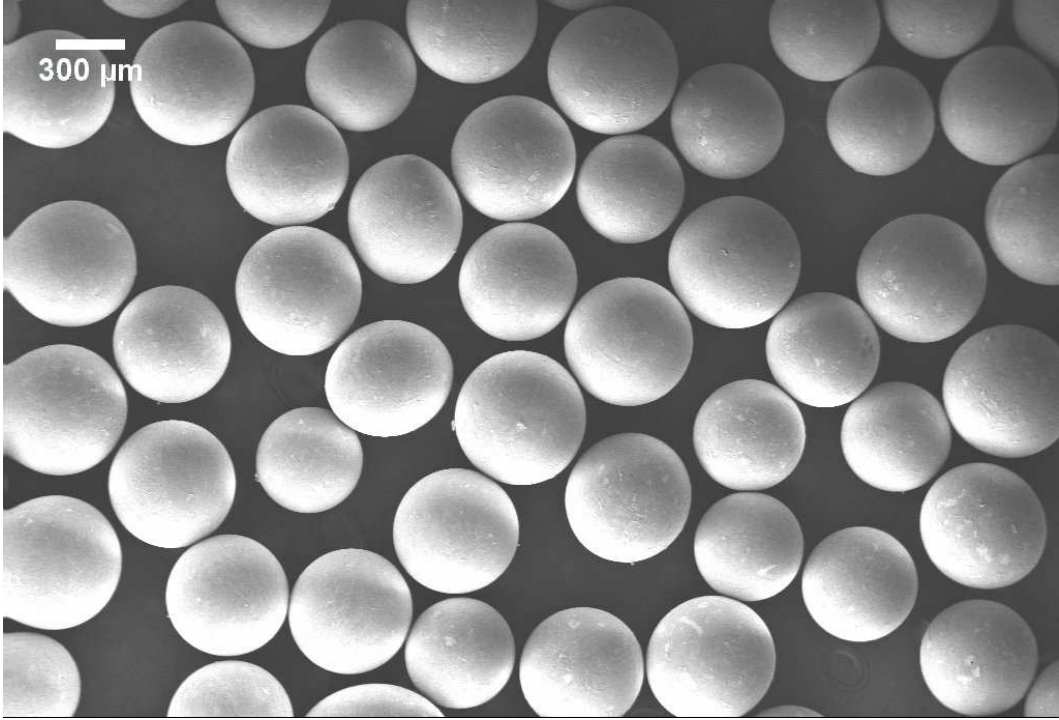
FIG. 3. Image of scanning electron microscopy for the 0.40 mm $\leq d \leq$ 0.60 mm glass beads.
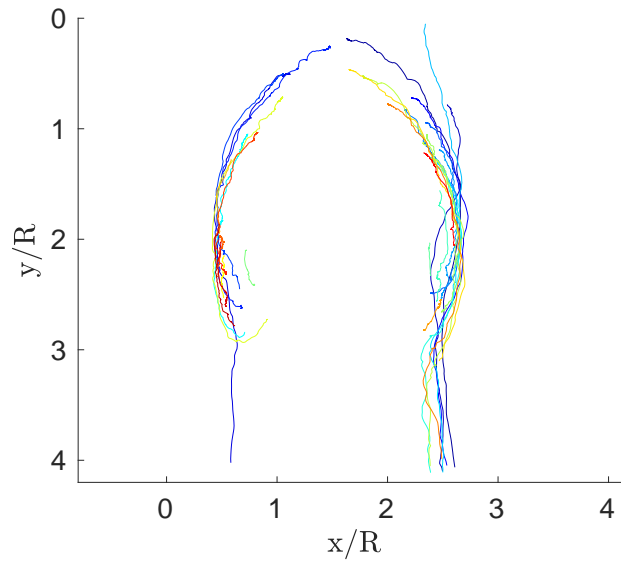

FIG. 4. Trajectories of marked grains that migrated to horns during the growth of a barchan dune. The water flow is from top to bottom. $Re = 1.21 \cdot 10^4$ and the heap initial mass was 6.2 g.
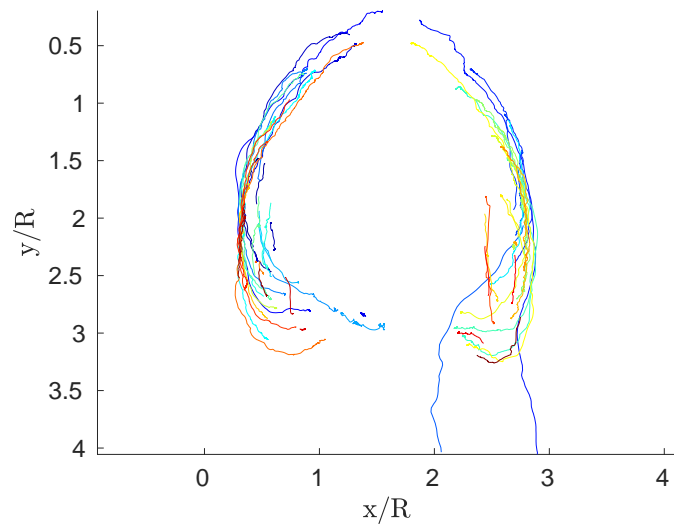
FIG. 5. Trajectories of marked grains that migrated to horns during the growth of a barchan dune. The water flow is from top to bottom. $Re = 1.21 \cdot 10^4$ and the heap initial mass was 10.3 g.
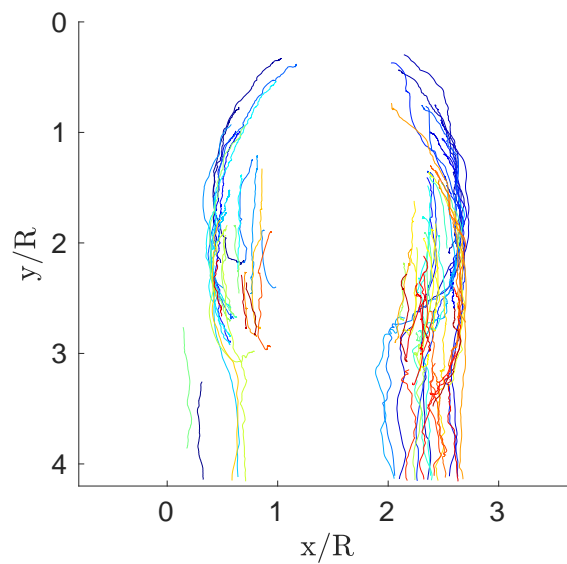

FIG. 6. Trajectories of marked grains that migrated to horns during the growth of a barchan dune. The water flow is from top to bottom. $Re = 1.47 \cdot 10^4$ and the heap initial mass was 6.2 g.
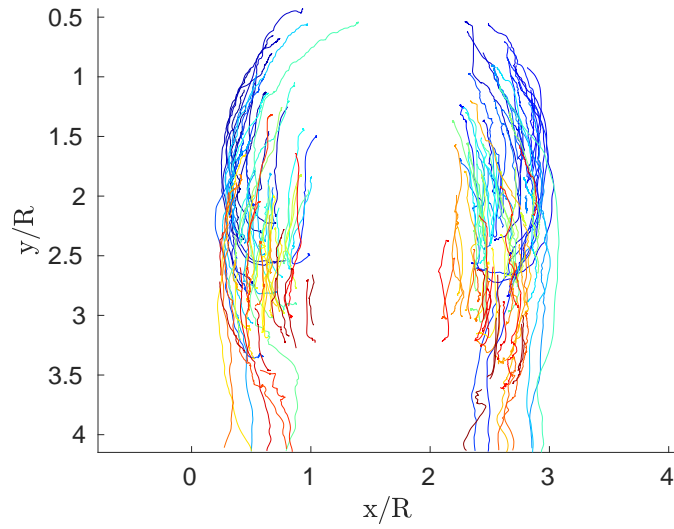
FIG. 7. Trajectories of marked grains that migrated to horns during the growth of a barchan dune. The water flow is from top to bottom. $Re = 1.47 \cdot 10^4$ and the heap initial mass was 10.3 g.
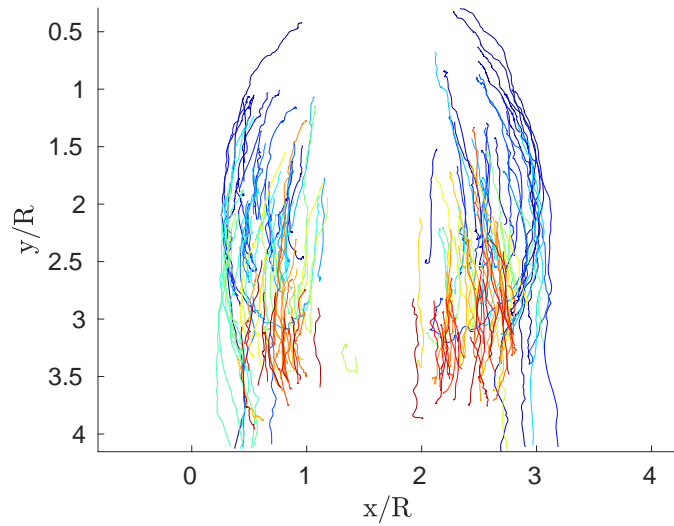

FIG. 8. Trajectories of marked grains that migrated to horns during the growth of a barchan dune. The water flow is from top to bottom. $Re = 1.82 \cdot 10^4$ and the heap initial mass was 10.3 g.