Chapter 10

Movie Files of PDC Simulations

OS 10.1. The video shows the propagation of a saline turbulent gravity current into fresh water initiated by lock release. The current is dyed red and flows from left to right, along the base of a tank of dimensions 3 m long × 0.15 m wide × 0.3 m deep. The lock dimensions are 0.15 m long × 0.15 m wide, and the reduced gravity is 0.20 m s^{-2}. Copyright Jeremy Phillips 2010.

OS 10.2. Movie at real speed of a dam-break flow generated from the release of a fluidized column of fine (d = 80 μm) glass beads and propagating in a 10 cm wide channel (cf. Roche *et al.*, 2008). Marks indicate the distance in meters. Copyright Olivier Roche 2010.

OS 10.3. Proximal detail view of a dam-break flow generated from the release of a fluidized column of fine (d = 80 μm) glass beads, showing the sliding flow head and aggrading basal deposit in the flow body. Black markers are colored glass beads of grain size of 700 μm. The movie is slowed down by ten times, and the basal horizontal plate is 1 cm thick. Copyright Olivier Roche 2010.

OS 10.4. Distal detail view of a dam-break flow generated from the release of a fluidized column of fine (d = 80 μm) glass beads, showing the sliding flow head and aggrading basal deposit in the flow body. Black markers are colored glass beads of grain size of 700 μm. The movie is slowed down by ten times, and the basal horizontal plate is 1 cm thick. Copyright Olivier Roche 2010.

OS 10.5. Simulation of dense pyroclastic flows at Tungurahua, Ecuador, using a depth-averaged approach (from Kelfoun *et al.*, 2009). This simulation reproduces the eruption of August 2006 and helps to constrain the physics of the natural flows. Copyright Karim Kelfoun 2010.