

Description of Supplementary Movies

Supplementary Movie 1: Small undulator of about 50 mm long

Supplementary Movie 2: Large undulator of about 100 mm long

Supplementary Movie 3: Particle Trajectories at silicone oil-air interface for two wave speeds -
Left: 53 mm/s, Right: 108 mm/s

Supplementary Movie 4: Velocity field above an undulator at Capillary number 17

Supplementary Movie 5: Velocity field above an undulator at Capillary number 714