

# Zonal jets at the laboratory scale: hysteresis and Rossby waves resonance

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Captions for the supplementary movies:

## 1. Movie 1 (Movie1\_particles.mp4)

Particles motion for an experiment in regime II, after saturation.  $P_i = \{26, 33, 60, 80, 100, 100\}$  corresponding to  $U_f = 4 \times 10^{-3}$  m/s. The clockwise motion are prograde. The movie is in real time.

## 2. Movie 2 (Movie2\_191115\_regimeI\_utheta.avi)

Evolution of the azimuthal component of the velocity for an experiment in regime I. The movie is accelerated 10 times, and starts at the moment when the forcing is turned on, with  $P_i = \{7, 10, 23, 36, 58, 100\}$  corresponding to  $U_f = 2.5 \times 10^{-3}$  m/s.

## 3. Movie 3 (Movie3\_191115\_regimeI\_vorticity.avi)

Evolution of the vertical component of the vorticity for an experiment in regime I. The movie is accelerated 6 times, and starts at the moment when the forcing is turned on, with  $P_i = \{7, 10, 23, 36, 58, 100\}$  corresponding to  $U_f = 2.5 \times 10^{-3}$  m/s.

## 4. Movie 4 (Movie4\_191025\_regimeII\_utheta.avi)

Evolution of the azimuthal component of the velocity for an experiment in regime II. The movie is accelerated 50 times, and starts at the moment when the forcing is turned on, with  $P_i = \{26, 33, 60, 80, 100, 100\}$  corresponding to  $U_f = 4 \times 10^{-3}$  m/s.

## 5. Movie 5 (Movie5\_190726\_zonons.avi)

Evolution of the azimuthal component of the velocity for an experiment in regime II showing the breaking of the jet into vortices, which then propagate azimuthally. The movie is accelerated 50 times, and starts once the flow is in the statistically steady state. The forcing is the same as in movie 4:  $P_i = \{26, 33, 60, 80, 100, 100\}$  corresponding to  $U_f = 4 \times 10^{-3}$  m/s.

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