

Movie Captions

- Movie 1

(Top) the vorticity field $\omega(t)$; (middle) time-averaged vorticity field $\bar{\omega}^t$ in the travelling wave frame; and (bottom) the fluctuation field $\omega(t) - \bar{\omega}^t$ for asymmetric state at $Re = 22350$ (Region SA1). Chaotic fluctuations are observed only in one of the vortices near the bottom channel wall causing ‘lower level’ asymmetry.

- Movie 2

(Top) the vorticity field $\omega(t)$; (middle) time-averaged vorticity field $\bar{\omega}^t$ in the travelling wave frame; and (bottom) the fluctuation field $\omega(t) - \bar{\omega}^t$ for symmetric state at $Re = 36300$ (Region SA3). The travelling wave structure experiences only small fluctuations.

- Movie 3

(Top) the vorticity field $\omega(t)$; (middle) time-averaged vorticity field $\bar{\omega}^t$ in the travelling wave frame; and (bottom) the fluctuation field $\omega(t) - \bar{\omega}^t$ for asymmetric state at $Re = 36300$ (Region SA3). Chaotic behaviour is observed in both of the vortices near the bottom wall causing ‘higher level’ asymmetry.

- Movie 4

(Top) the vorticity field $\omega(t)$; (middle) time-averaged vorticity field $\bar{\omega}^t$ in the travelling wave frame; and (bottom) the fluctuation field $\omega(t) - \bar{\omega}^t$ for the numerical approximation to the edge state at $Re = 36300$.

- Movie 5

(Top) the vorticity field $\omega(t)$; (middle) time-averaged vorticity field $\bar{\omega}^t$ in the travelling wave frame; and (bottom) the fluctuation field $\omega(t) - \bar{\omega}^t$ for symmetric state at $Re = 72000$ (Region S2) where instantaneous asymmetry is positive. The jet is less rigid instantaneously than at lower Reynolds numbers and closer to the bottom of the channel on average.

- Movie 6

(Top) the vorticity field $\omega(t)$; (middle) time-averaged vorticity field $\bar{\omega}^t$ in the travelling wave frame; and (bottom) the fluctuation field $\omega(t) - \bar{\omega}^t$ for symmetric state at $Re = 72000$ (Region S2) where instantaneous asymmetry is negative. The jet is less rigid instantaneously than at lower Reynolds numbers and closer to the top of the channel on average.