



Intermittency in a tidal river turbulent flow

Francois G. Schmitt (1), Trung Le Kien (2), Maxime Thiébaud (2), and Alexei Sentchev (2)

(1) CNRS, Lab. Oceanology and Geosciences UMR 8187, Wimereux, France (francois.schmitt@cns.fr), (2) ULCO, Lab. Oceanology and Geosciences UMR 8187, Wimereux, France

We consider here fixed point measurements of the turbulent velocity recorded in the Sea Schelde river at Temse, 10 km south-west of Antwerp (Belgium). An Acoustic Doppler Velocimeter (ADV) was recording 3 components of the flow velocity at 32 Hz, 1 m below the surface, during 2 tidal cycles (25h). At this position, the river flow is still strongly influenced by the tide. The measurements cover different tidal current regimes: strong ebb and flood flow with velocity of 1.5m/s, and also a flow reversal. The Taylor based Reynolds number is estimated to be 530. The intermittency during the flow reversal period is studied using cumulants approach, and during stationary flows in both directions, the intermittency is studied using traditional scaling approaches. The scale invariant moment functions obtained are compared to laboratory experiments.