

Supplementary page to figure 24(d) of main article.

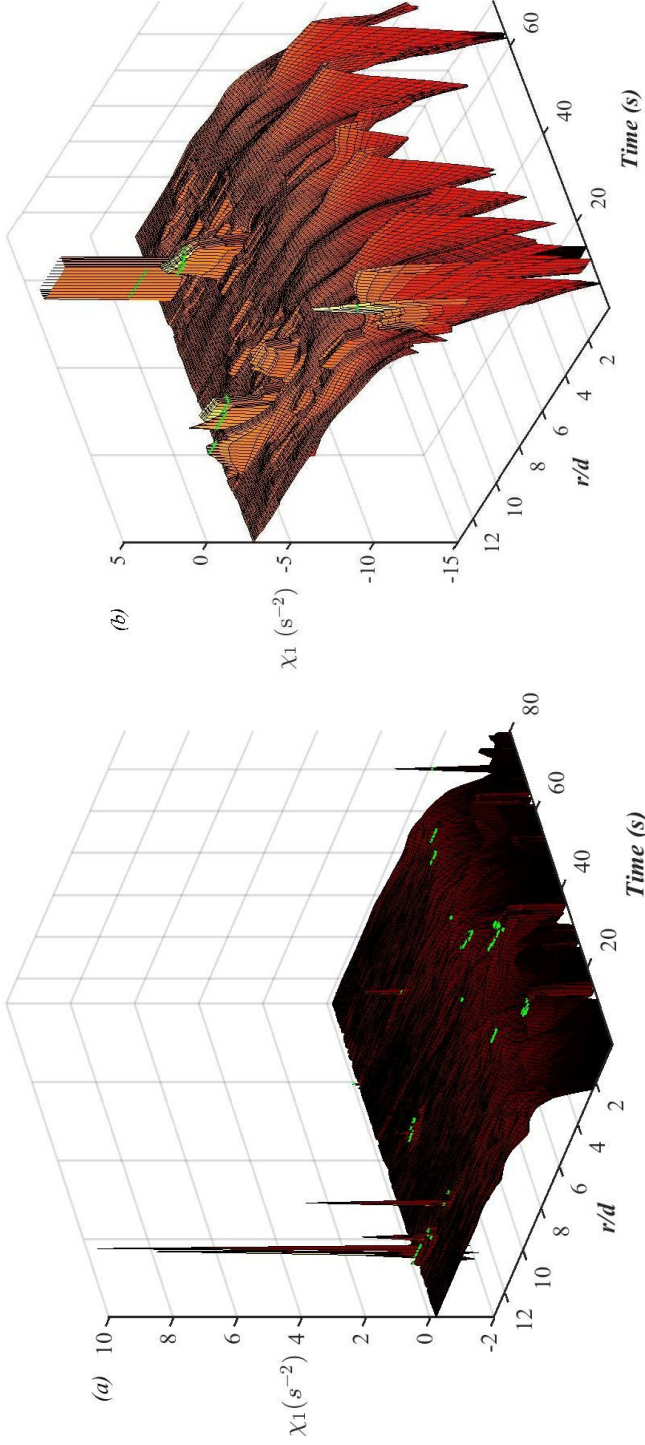


Figure S2: This figure supplements the discussion of figure 23(d) of the main article. Figure 23(d) displays the temporal development of  $\chi_1$  for the particular radial location  $r/d = 3.5$  and for the rotation rate  $\Omega = 0.21 \text{ rad s}^{-1}$  only. Figures S1(a), (b) provide a more comprehensive overview. The figures illustrate the temporal development of  $\chi_1$  on the interval  $0 \leq r/d \leq 13$  and for two different rotation rates of (a)  $\Omega = 0.21 \text{ rad s}^{-1}$  and (b)  $\Omega = 0.84 \text{ rad s}^{-1}$ . The green iso-surface lines identify  $\chi_1 = 0$ . These lines enclose regions of the flow field where  $\chi_1 > 0$ , that is regions where the criterion for instability is satisfied. The main purpose of these figures is to show that the fluctuating behaviour of  $\chi_1$  around values  $O(\chi_1 = 0)$ , becomes substantially more prominent as the rotation rate increases and that is not only restricted to the particular value of  $r/d = 3.5$  but that it extends radially outwards as far as about  $r/d \approx 10$  in (b).