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Velocities of laminar-turbulent fronts in plane Couette flow YOHANN DUGUET, LIMSI-CNRS, PHILIPP SCHLATTER, DAN HENNING-SON, KTH Stockholm — We investigate numerically the motion of the fronts separating laminar from turbulent zones in subcritical shear flows, with an emphasis on localised turbulent spots in plane Couette flow. A data-driven stochastic analysis of the simulation data is used to compute the average velocities of fronts, in the special cases where they are constrained to travel either in the spanwise or streamwise direction, as the Reynolds number Re varies. A quantitative comparison is performed with data for the front velocities of unconstrained spots (from large domain computations). It reveals the dynamical role of a large-scale, nearly twodimensional secondary flow, which accelerates the front in the spanwise direction and deccelerates it in the streamwise direction. An extrapolation of the underlying linear advection mechanism to the lowest-transitional values of Re explains some of the self-organisation properties of laminar-turbulent patterns in the intermittent regime.

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