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Recurrence of Travelling Waves in Transitional Pipe Flow RICH KERSWELL, Bristol University, OWEN TUTTY, Southampton University — Wallbounded shear flows are of tremendous practical importance yet their transition to turbulence is still poorly understood. A new direction in rationalising this phenomenon revolves around identifying alternative solutions (beyond the laminar state) to the governing Navier-Stokes equations. Such solutions which take the form of travelling waves (TWs) have only recently been found in pipe flow (Faisst & Eckhardt 2003, Wedin & Kerswell 2004). Despite being unstable, experimental observations (Hof et al 2004) have nevertheless indicated that these solutions are transiently realised. To quantify this, we perform a series of numerical experiments in which the spatial signatures of these TWs are sought in transitional pipe flows (Kerswell & Tutty 2007).

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