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High Reynolds numbers scaling of the turbulent/non-turbulent interface CARLOS BETTENCOURT DA SILVA, TIAGO S. SILVA, Inst Superior Tecnico (IST), IDMEC TEAM — The scaling of the turbulent/non-turbulent interface (TNTI) at high Reynolds numbers is assessed using new direct numerical simulations (DNS) of turbulent planar jets (PJET) and shear free turbulence (SFT) with Reynolds numbers ranging from $142 \leq Re_\lambda \leq 300$. The thickness of the turbulent sublayer (TSL), where the enstrophy production dominates over enstrophy diffusion, is of the order of the Taylor micro-scale, and is roughly one order of magnitude larger than the Kolmogorov micro-scale for these Reynolds numbers, however it clearly scales with the Kolmogorov micro-scale, at sufficiently high Reynolds numbers. It is argued the same scaling should be observed in TNTI from mixing layers, wakes and boundary layers, provided the Reynolds number is sufficiently high.

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