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**Spectral analogue of the law of the wall** GUSTAVO GIOIA, CARLO ZUNIGA ZAMALLOA, PINAKI CHAKRABORTY, Okinawa Institute of Science and Technology — We use a recently-proposed spectral model (Gioia et al., PRL, 2010) of the Reynolds shear stress in smooth wall-bounded, uniform turbulent flows to derive a scaling relation for the turbulent energy spectra. This scaling relation is the spectral analogue of Prandtl's scaling relation for the mean velocity profiles (the "law of the wall"). To test the scaling relation for the turbulent energy spectra, we use data from direct numerical simulations of channel flow.

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