# Multi-site observation of large-scale eddies in the surface layer of the Loess Plateau

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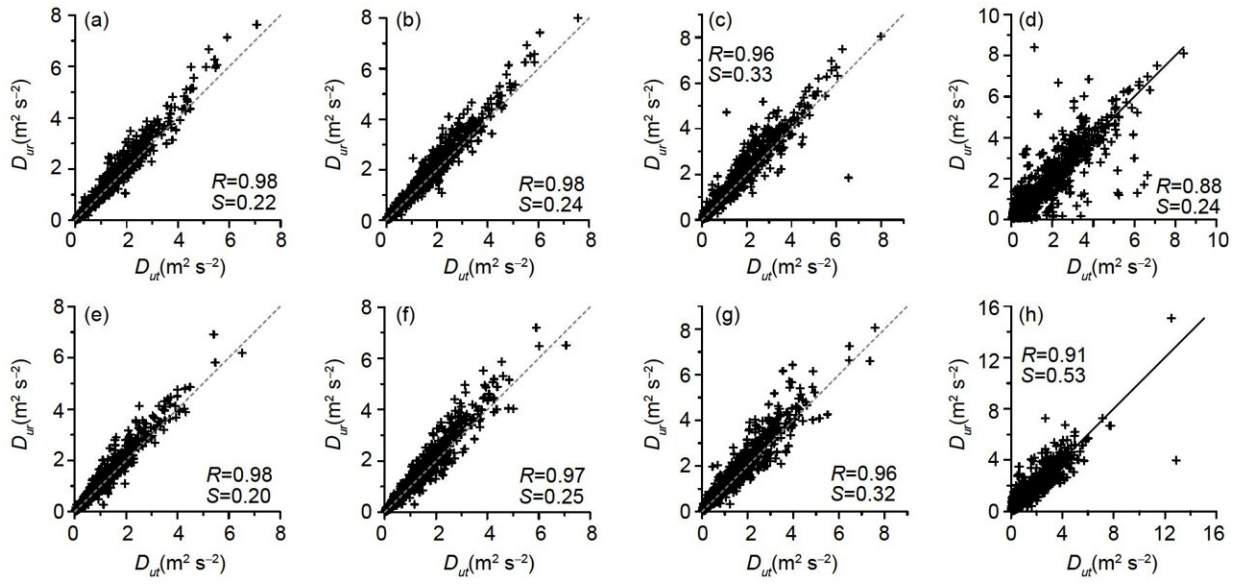


(a)–(d) are the fitting linear relationships, Dut = Dur, related to the longitudinal velocity after 10-min, 20-min, and 40-min high-pass filtering and without filtering, respectively; (e)–(h) are the fitting linear relationships, Dvt = Dvr, related to the cross velocity after 10-min, 20-min, and 40-min high-pass filtering and without filtering, respectively. Credit: Science China Press

A study recently published in the journal *Science China Earth Sciences* was led by Dr. Chen of the Northwest Institute of Eco-Environment and Resources, Chinese Academy of Sciences. Based on the principle of turbulence correlation and ensemble averaging, his team first used four-

site observations of atmospheric turbulence under complex conditions.

On the basis of the fact that atmospheric turbulence in the atmospheric boundary layer is usually random and stationary, the time series data of each point were combined with the spatial distribution to form a long time series. This can be used to analyze the various states of regional turbulence observation, and to more comprehensively analyze turbulence structure and estimate turbulence spectra.

Using the four-site observation data under the complex conditions of the Loess Plateau region, it was demonstrated that the various states of turbulence can be more easily satisfied with four-site turbulence observations on the scale of the entire atmospheric boundary layer (