

# On the topology of turbulence and its influences on what we know about surface layer scaling

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Turbulence has traditionally been separated into the random and coherent part. Here we examine a new paradigm of examining turbulence based on its topology in terms of the anisotropy of the Reynolds stress tensor. This new approach allows detailed investigation of traditional similarity relationships and finds the sources of failure of these relationships for different anisotropy types. Here I will present data from horizontally homogeneous and flat terrain and examine in detail similarity scaling relations as well as the characteristics of these states of anisotropy, identifying conditions in which they occur and connecting them with different governing parameters.