



## **Meandering dynamics in the Stable Boundary Layer**

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One year of continuous measurements on 10 levels carried out at a coastal site in Espirito Santo State, south-eastern Brazil, and the FLOSSII dataset were analysed to characterize the wind meandering phenomenon in the Stable Boundary Layer. During low-wind episodes the oscillations of the horizontal components of the wind velocity associated to the oscillation of the wind temperature are easily recognizable by a clear negative lobe in their autocorrelation functions. We used this distinctive feature to identify meandering and non-meandering case. We show that the ratio of the variance of the wind velocity vertical component over the variance of the composite of the wind velocity horizontal components splits the frequency distribution of the turbulence statistics and divides the nocturnal boundary layer in two different regimes characterized by different turbulent properties. In particular, we showed how during meandering conditions the turbulent heat flux is negligible and the Boundary Layer decouples thereby enabling the onset of wavelike phenomena.