

Trends in the frequency, intensity and variability of wind speed in Córdoba, Argentina, between 1968 and 2018

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Summary

Trends in frequency, intensity and variability of wind speed (VV) in the central territory of Argentina between 1968 and 2018 were described from data of four surface meteorological stations (Río Cuarto Aero (RC), Marcos Juárez Aero (MJ), Pilar Observatorio (PI) and Villa Dolores Aero (VD)) from the Servicio Meteorológico Nacional network. Likewise, temporal trends were evaluated by different parametric and non-parametric methods: ordinary least square (MCO), Mann-Kendall test (M-K), Theil-Sen's (Th-S), and a recent innovation proposed by Sen (iS) also. While the average annual VV did not present evidence of significant change in RC, PI and VD, in MJ it accuses a significant decrease of $-0.028 \text{ m s}^{-1}\text{y}^{-1}$. The evidence collected predominantly supports the reduction of wind intensity in the region that would result in a reduction of evaporation and crops transpiration rate. The use of iS method leaves some question open. Although it produces interception and angular slope values similar than the classical methods, iS tends to judge the evidence in a generally significant way and generates uncertainty about its ability to detect when the change is really consistent.

Key words: stationary; climatic change; innovative method of Sen.