



## Frequency distributions for tropopause pressure, height and temperature over the southeastern tip of South America

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Climatic frequency distributions for thermal tropopause pressure, height and temperature are month-to-month analyzed at nine stations located in the southeastern tip of South America. Instead of getting the tropopause from significant levels, an algorithm that calculates the tropopause from mandatory levels is applied. In order to make the different distributions comparable the variables are standardized. Additionally, the  $\chi^2$  goodness-of-fit test is applied to compare each distribution against a normal one. Eight Argentine upper-air stations are included in this research, namely Salta (87047, SASA,  $\phi=24.85^\circ\text{S}$ ,  $\lambda=65.48^\circ\text{W}$ ), Resistencia (87155, SARE,  $\phi=27.45^\circ\text{S}$ ,  $\lambda=59.04^\circ\text{W}$ ), Córdoba (87344, SACO,  $\phi=31.31^\circ\text{S}$ ,  $\lambda=64.22^\circ\text{W}$ ), Mendoza (87418, SAME,  $\phi=32.83^\circ\text{S}$ ,  $\lambda=68.77^\circ\text{W}$ ), Ezeiza (87576, SAEZ,  $\phi=34.82^\circ\text{S}$ ,  $\lambda=58.53^\circ\text{W}$ ), Santa Rosa (87623, SAZR,  $\phi=36.57^\circ\text{S}$ ,  $\lambda=64.27^\circ\text{W}$ ), Neuquén (87715, SAZN,  $\phi=36.56^\circ\text{S}$ ,  $\lambda=64.26^\circ\text{W}$ ) and Comodoro Rivadavia (87860, SAVC,  $\phi=45.77^\circ\text{S}$ ,  $\lambda=67.50^\circ\text{W}$ ). Additionally, Mount Pleasant (88889, EGYF,  $\phi=51.81^\circ\text{S}$ ,  $\lambda=58.45^\circ\text{W}$ ), located in the Falkland Islands, is also used. The period spanned by the datasets is January 1973 – December 2006, except for EGYF (March 1988 – December 2006).

As expected, most of the distributions are not normal. Although the study was carried out with various levels of confidence, the standard value of 95% is established. An outline of the results is as follows. Tropopause pressure is normal only at SAME in the winter months. Regarding height, distributions are not normal at all the stations, with

the exception of SAME (normal in winter months). As to temperature distributions, they are normal all year long almost at all the stations; the exceptions are SASA (not normal all year long) and SACO, SAME and SARE (normal only for winter months).