



Evolution of atmospheric humidity flux from the SIRGAS-CON Network during five consecutive severe storms near to the Andes Range

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A large and dense active GNSS (Global Navigation Satellite System) network offers an atmospheric observational platform over South America, the SIRGAS-COM (Geocentric Reference System for the Americas, continuously operating) network. In the last years, studies were carried up in order to obtain integrated water vapor (IWV) from this network. From a suitable data processing it is possible to retrieve the zenith tropospheric delay (ZTD) from the GPS signal. This may be separated in two components: the zenith hydrostatic delay (ZHD) caused by the presence of dry air; and the zenith wet delay (ZWD) caused by the atmospheric water vapor. In doing so, $ZTD = ZHD + ZWD$. By the use of an adequate methodology, IWV can be retrieved from ZTD. This work presents measurements of IWV for a 45 days period and its spatial and temporal variability over the Cuyo region (Mendoza, Argentina). The synoptic conditions are analyzed in concordance with the genesis and evolution of 5 deep convection events with severe hailstone precipitation. S Band radar and satellite imagery relative to these events are also included.

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