

## Suprathermal proton and $\alpha$ -particle spikes ( $E/q = 6.5\text{--}225$ keV/e) observed by the WIND-SMS experiment near the libration point L1

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**Abstract.** The present study deals with suprathermal proton ( $E/q = 6.5\text{--}225$  keV/e) and  $\alpha$ -particle spikes measured by the WIND-SMS experiment in the interplanetary space. They reach up to  $\approx 5\text{--}20$  times the solar wind speed and last from a few minutes up to  $\approx 30$  minutes. Measurements obtained simultaneously by the Solar Wind Ion Composition Sensor SWICS ( $E/q = 0.5\text{--}31.5$  keV/e) were also available for this study. In order to exclude particles escaping from the magnetosphere or accelerated by interplanetary shocks and corotating interaction regions we selected ions which were

associated with a distinct decrease of the interplanetary magnetic field magnitude and changes of the azimuthal and tangential field direction. We interpret these signatures as manifestation of a reconnection process. While it is known that reconnection processes occur in the interplanetary magnetic field, we show for the first time that suprathermal particles can be accelerated up to  $\approx 100$  keV/e in the interplanetary space during such processes.

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