



# Changes in Sea-Level Pressure over South Korea Associated with High-Speed Solar Wind Events

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(Submitted on 10 Jul 2011)

We explore a possibility that the daily sea-level pressure (SLP) over South Korea responds to the high-speed solar wind event. This is of interest in two aspects: First, if there is a statistical association this can be another piece of evidence showing that various meteorological observables indeed respond to variations in the interplanetary environment. Second, this can be a very crucial observational constraint since most models proposed so far are expected to preferentially work in higher latitude regions than the low latitude region studied here. We have examined daily solar wind speed  $V$ , daily SLP difference  $\Delta \text{SLP}$ , and daily  $\log(BV^2)$  using the superposed epoch analysis in which the key date is set such that the daily solar wind speed exceeds  $800 \text{ km s}^{-1}$ . We find that the daily  $\Delta \text{SLP}$  averaged out of 12 events reaches its peak at day +1 and gradually decreases back to its normal level. The amount of positive deviation of  $\Delta \text{SLP}$  is  $+2.5 \text{ hPa}$ . The duration of deviation is a few days. We also find that  $\Delta \text{SLP}$  is well correlated with both the speed of solar wind and  $\log(BV^2)$ . The obtained linear correlation coefficients and chance probabilities with one-day lag for two cases are  $r \approx 0.81$  with  $P > 99.9\%$ , and  $r \approx 0.84$  with  $P > 99.9\%$ , respectively. We conclude by briefly discussing future direction to pursue.

Comments: 23 pages, 4 figure, accepted to Advances in Space Research

Subjects: **Earth and Planetary Astrophysics (astro-ph.EP)**; Space Physics (physics.space-ph)

Cite as: **arXiv:1107.1841 [astro-ph.EP]**  
(or **arXiv:1107.1841v1 [astro-ph.EP]** for this version)

## Submission history

From: Il-Hyun Cho [[view email](#)]

[v1] Sun, 10 Jul 2011 07:45:02 GMT (102kb)

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