

# Supporting Information for ”Medium Energy Electron Flux in Earth’s Outer Radiation Belt (MERLIN): A Machine Learning Model”

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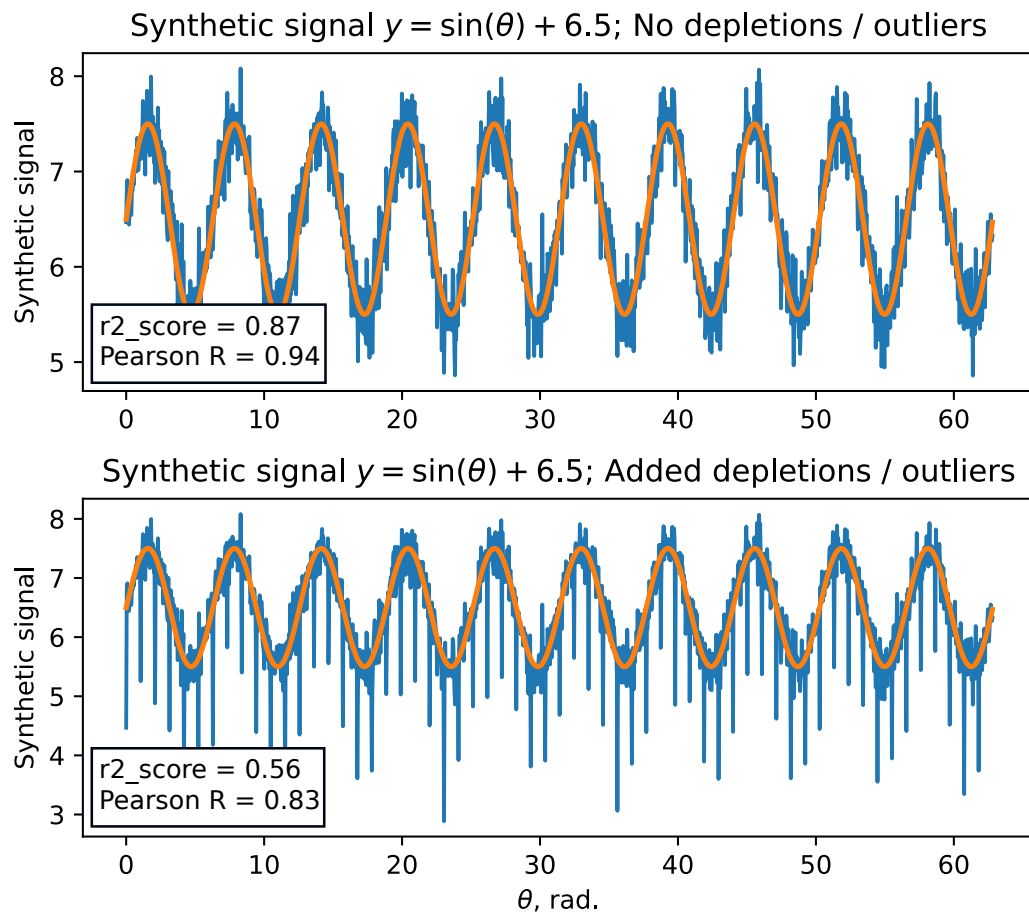
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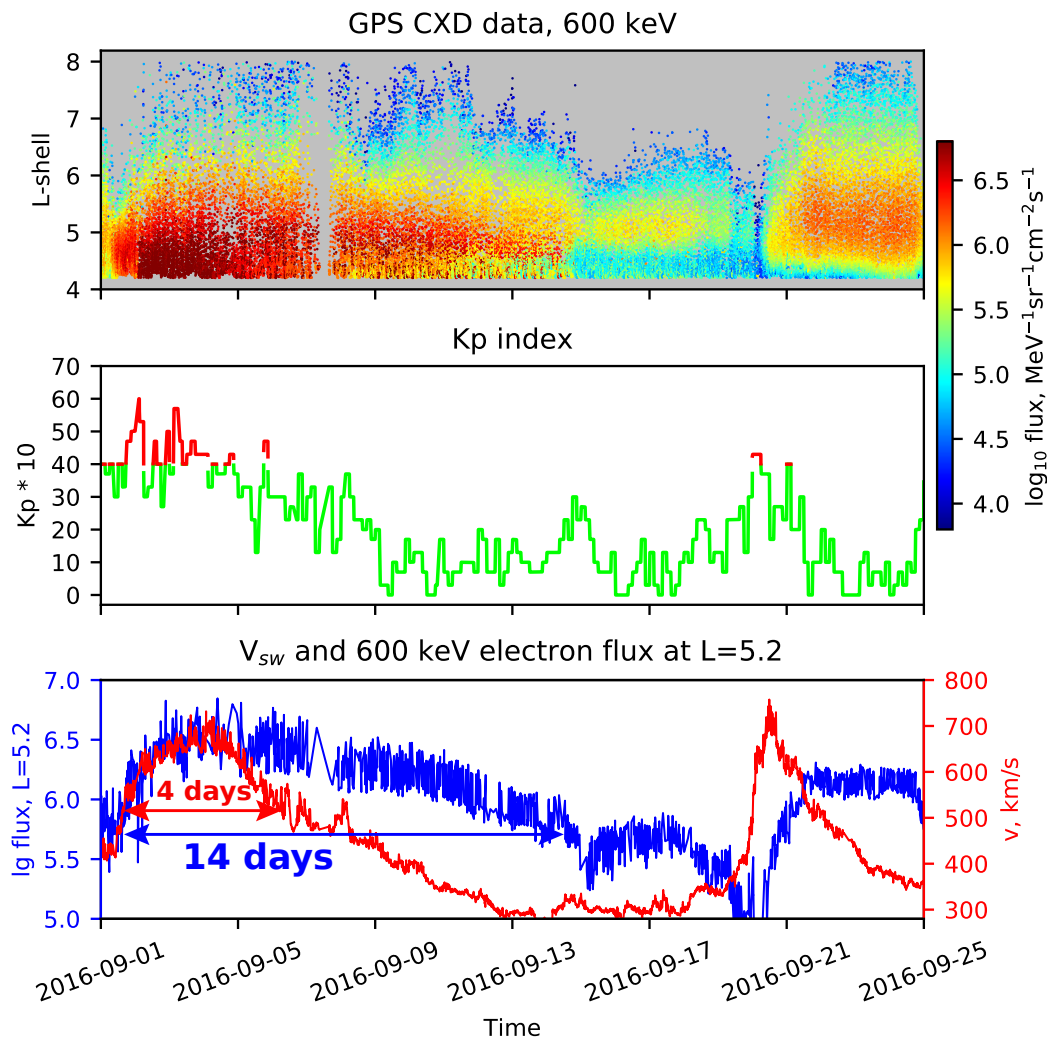
1. Figure S1

2. Figure S2

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**Figure S1.** (a) Sinusoid signal with added random noise (blue), and the pure sinusoid signal (orange); r2-score value is 0.87. (b) Sinusoid signal with random noise and 60 added outliers (blue), and the original sinusoid (orange); r2-score value is 0.56.



**Figure S2.** (a) GPS electron flux data merged for 21 satellites with CXD detectors in September 2016. (b) Kp-index during this interval. (c) 600 keV electron flux at a fixed L=5.2 (blue), and solar wind velocity (red). After the flux enhancement on the 1-2 September 2016, the velocity dropped to the quiet-time value in  $\sim 4$ -5 days and continued decreasing up to  $< 300$  km/s, while the flux took approximately 14 days to decay to the pre-storm value.