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Interactive comment on "Multisatellite observations of the magnetosphere response to changes in the solar wind and interplanetary magnetic field" *by* Galina Korotova et al.

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Figures 7 (a, b, c, d, e, f) present the response of energetic electrons to the IP shock. Panels (a, b, c, d) show a clear correlation between azimuthal electric field oscillations and energetic electron fluxes in the energy range from 31 to 183 keV that do not display obvious phase differences across the energies. After the shock arrival, the electron population increased, especially for the lower energies (panels b and d). In the electrical field of 14 mV/m and with a drift velocity of 35-40 km/s the flux of 54 keV electrons increased by factors of 21 and 14 at Van Allen Probes B and A, respectively, in less than a drift period (panels e and f). In the absence of parallel electrical fields the

energy variations of charged particles interacting with ULF waves in transverse magnetic field depends on two contributing parts: the magnetic field compression and the electric field acceleration [Southwood and Kivelson, 1982]. Zong et al. [2009] showed that the enhancement of the spectrum due to shock compression is rather small and suggested that the ULF electric field waves have a major contribution to the electron acceleration. Note that the impact of the shock on the relativistic electron populations observed on February 27, 2014 by REPT was not significant and was characterized by a weak increase followed by a decrease (not shown).

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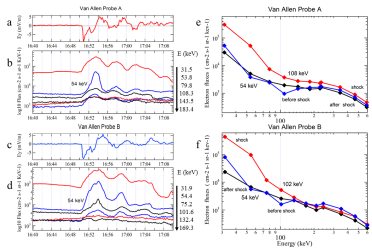

Fig. 1. Figures 7. Response of the energetic particles to the IP shock. Panels a and c show measurements of the azimuthal component of the electric field. Panels b and d show electron fluxes for the energies