Some features of injection of relativistic electrons into the inner magnetosphere during a magnetic storm

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We present three geomagnetic storms in which storm-injected relativistic electrons behave non-trivially. In the case (1) a moderate storm gave an increase of the relativistic electron intensity at low L~4 (Polar) while the post-storm electron intensity at geosynchronous orbit (GOES) remained an order of magnitude lower than its pre-storm level. In this case Bz abruptly turned northward at very beginning of the recovery phase, which has been followed by very low substorm activity. Case (2) presents a storm with low output of relativistic electrons at geosynchronous orbit; that was a strong storm inspired by the high-speed solar wind flows. In this case the substorm activity was very low during the recovery phase again. The case (3) shows a different example: high electron output at geosynchronous distances from the storm occurred while low-speed solar wind was observed. An assumed reason of the strong electron acceleration is high substorm activity at the recovery phase resulted from the Bz fluctuations.
We also discuss the possibility of prediction of the storm westward electrojet position and the storm ring current plasma pressure distribution using the formula binding a storm maximum amplitude Dst and an L-coordinate of the peak of storm-injected relativistic electrons.