

LT and Dst dependence of the ring current

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Spatial distribution of the ring current under five Dst levels has been found from magnetic data. The main part of the current flows at $|z| < 3 R_E$. The maximum of the current is located near midnight at distances of 7-8 R_E . The nightside part of the ring current at distances from 4 to 9 R_E can be approximated as $I_{RC}(\text{MA}) = 1.8 - 0.027 Dst$. The dayside ring current is several times weaker and poorly correlates with Dst . The divergence of the ring current allows to calculate the region 2 field-aligned currents as well as the partial ring current (PRC). The PRC reveals a non-linear dependence on Dst . It achieves its minimum value of 1.3 MA under $Dst = -10$ nT. Under $Dst = -70$ nT PRC = 4 MA. The maximum of PRC is located at 03 LT under quiet conditions ($Dst = 0$) and at 01 LT under $Dst = -70$ nT.