

CIMI Equatorial Ion Pressure

The CIMI (Comprehensive Inner Magnetosphere-Ionosphere) Model is an advanced version of the Fok's CRCM model. CIMI solves the bounce-averaged Boltzmann equation of ring current and radiation belt particle distribution functions. The calculated phase space density (PSD) is a function of two spatial coordinates and two adiabatic invariants. For the CIMI output, PSD is converted to particle fluxes at the min-B plane. There is capability in the model to produce synthetic TWINS ENA images from the calculated ion flux. For detailed description of the CIMI and CRCM models, see the references below.

The figure shows CIMI ion pressure at the equator in nP. The format of the figure is similar to that of the inverted ion pressure: the Sun is to the left; the radius extends to 8 RE; the peak of the ion pressure is marked by a black star. Note that the color bar scale is linear and fixed for each individual storm.

References:

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