CIMI Pitch-Angle Distribution (PAD) at Peak of the Pressure

The CIMI (Comprehensive Inner Magnetosphere-Ionosphere) model [*Fok et al*., 2014] calculates ring current and radiation belt particle phase space density distribution as a function of two spatial coordinates and two adiabatic invariants. The CIMI distribution function is then converted to particle flux in energy and equatorial pitch angle. This figure shows the calculated pressure as a function of pitch angle at the location of peak equatorial pressure marked by black asterisks in the two left plots. Ion flux is normalized by the pitch-angle averaged flux. Isotropic pitch-angle distribution will have a value of 1 at all pitch angles. The pitch-angle distribution is assumed to be symmetric about 90 degree.

Reference:

Fok, M.-C., N. Y. Buzulukova, S.-H. Chen, A. Glocer, T. Nagai, P. Valek, and J. D. Perez (2014), The Comprehensive Inner Magnetosphere-Ionosphere Model, *J. Geophys. Res. Space Physics, 119*, 7522– 7540, doi:10.1002/2014JA020239.