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Study of interrelation between radial diffusion, magnetospheric convection and pitch angle distribution

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The average quiet time structure of energetic Earth's radiation belt protons can be explained as an equilibrium balance among radial diffusive transport, losses due to Coulomb collisions, charge exchange with the ambient neutral hydrogen geocorona and drift of protons under influence of the magnetospheric convection. Therefore for study of interrelation between radial diffusion, magnetospheric convection and pitch angle distribution is used the steady state transport equation at arbitrary pitch angle in the Earth's magnetosphere. On the basis of the numerical solution of this equation are calculated different characteristics of the trapped protons for $1 < L < 6.6$ and $1 \text{ keV} < E < 750$ keV. A comparison between theory and observations is made.