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Wave particle diffusion of energetic ring current ions SAMUEL JONES, University of Texas at Arlington, MEI-CHING FOK, KONSTANTIN GAMAYUNOV, GEORGE KHAZANOV, NASA / MSFC — Electromagnetic Ion Cyclotron (EMIC) waves are known to be generated in the ring current by pitch-angle anisotropy. These waves produce wave-particle interactions which can cause significant diffusion of ions with energies above the wave resonance. We incorporate pitch angle diffusion calculated from EMIC amplitude and plasmaspheric density into the Comprehensive Ring Current Model (CRCM). Using this model we study loss cone depletion of energetic ions during various magnetic storm events including the superstorm of 20 November 2003. We compare the simulated decay rates to those observed by IMAGE/HENA and other particle precipitation data.

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