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Electric diffusion coefficient calculated based on in situ electric field measurements by THEMIS

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Based on eight years' observations from THEMIS, we investigate the statistical distribution of electric field Pc5 ULF wave power under different geomagnetic activities and calculate the radial diffusion coefficient due to electric field, D_{LL}^{E}, for outer radiation belt electrons. A simple empirical expression of D_{LL}^{E}[THEMIS] is also derived. Subsequently we compare D_{LL}^{E}[THEMIS] to previous D_{LL}models, and find similar Kp dependence with the D_{LL}^{E}[CRRES] model, which is also based on in-situ electric field measurements. The absolute value of D_{LL}^{E}[THEMIS] is constantly higher than D_{LL}^{E}[CRRES], probably due to the limited orbital coverage of CRRES. The differences between D_{LL}^{E}[THEMIS] and the commonly-used D_{LL}^{B}[B-A] and D_{LL}^{E}[Ozeke] models are significant, especially in Kp dependence and energy dependence. Possible reasons for these differences and their implications are discussed. The diffusion coefficient provided in this paper, which also has energy dependence, will be an important contributor to quantify the radial diffusion process of radiation belt electrons.