

LONG-TERM VARIATION OF COSMIC RAYS IN THE OUTER HELIOSPHERE

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Data from the Voyager 1 & 2 missions have been obtained almost continuously for more than 23 years. By using these data, we investigate long-term periodicities in the variation of cosmic ray particles with energies of > 70 MeV by introducing the wavelet transform technique. We found an ~ 2 years variation. Furthermore, this phenomenon is observed over the period of 1982 - 1990, which is almost one solar cycle, with large amplitude compared to the next solar cycle. Previously an ~ 1.4 years variation has been observed at Ulysses in the early 1990s. These observational results may be showing difference of modulation effect due to the solar magnetic polarity and dependences on radial distance. We have also analyzed neutron monitor data for comparison. We report preliminary results for the two solar cycles.