Invetigation of causalities for long-term variabilities of Jupiter's auroral radio emissions

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In order to investigate control factor(s) of Jupiter’ s long-term magnetospheric variations, we have investigated occurrence features of Jupiter's auroral radio emission using the radio wave data for more than 25 years (1995~) observed by the WIND satellite. We have derived occurrence probabilities from the data observed in the frequency range of 1 to about 14MHz around Jupiter's opposition periods. The results are interesting; i.e., the yearly occurrence probabilities show almost monotonous decrease from 1995 to 2005, then gradual increase from 2005 to 2012, but change to somewhat complex nature with increase and decrease for non Io-related components. It does not seem to correspond to simple variations of De and solar and/or solar wind activities those have been discussed as plausible causalities, but implies that some other or multiple causalities control the long term variations. We will make discussions on possibility of other causalities including Io's volcanic material variations.

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