

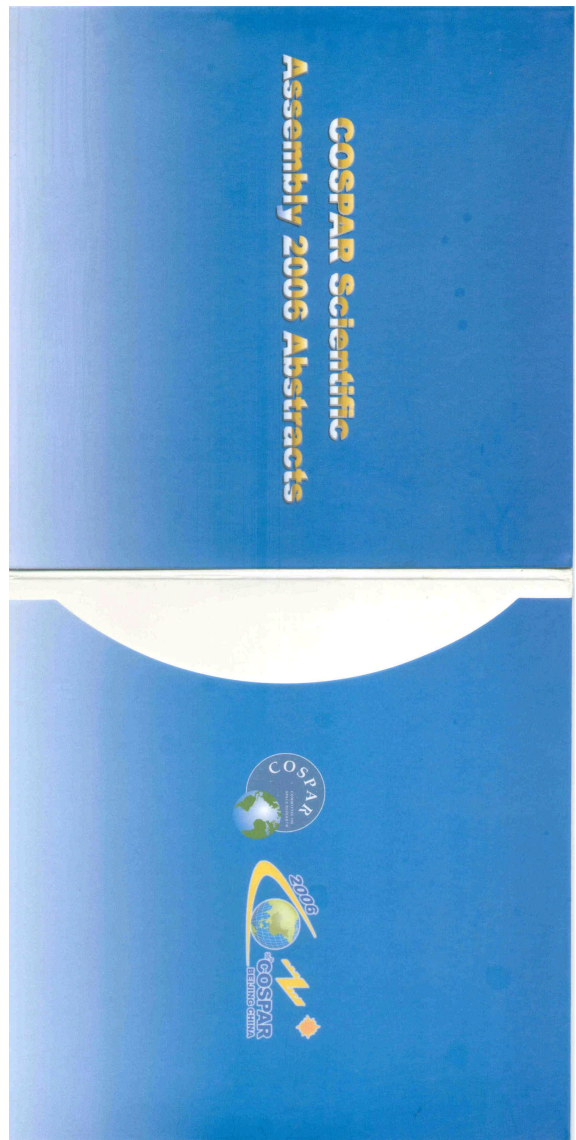
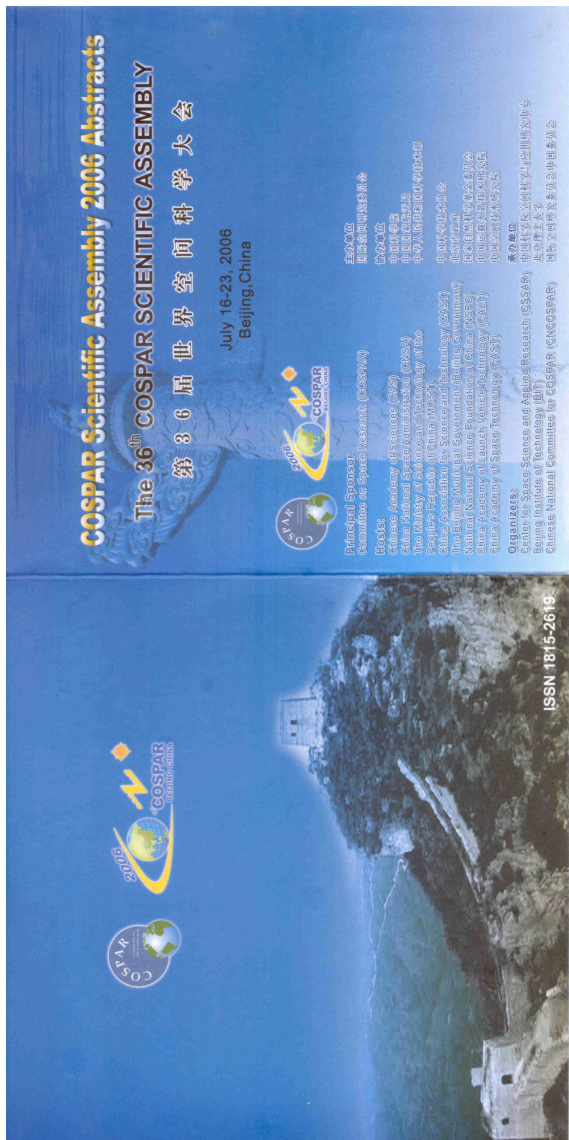
Analysis of meteors precipitation using ionospheric back-scatter radar

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A 50 MHz coherent back-scatter radar, also known by the anachronism RESCO, has been operated since 1998 at São Luís Space Observatory (2.33° S, 44.2° W, DIP: -0.5) near the dip equator. The main purpose of RESCO is to study the equatorial electrojet dynamics through spectral analyses of the received echoes that allow us to identify the dominant type of plasma instabilities and its drift speed in the electrojet. Using the RESCO radar we are also able to collect data from reflection of the transmitted signal caused by meteor trail, generally observed at about 100 km of altitude. The energy received in the reflection process is higher than that expected by the back-scatter in the equatorial electrojet irregularities. So, even during the presence of plasma irregularities it is possible to observe echoes from meteor trail. To characterize the presence of meteor reflection over the equatorial electrojet plasma irregularities data, it was developed a methodology of detection of “meteor” echoes due to reflection in meteor trail. In this paper, we analyze the presence of meteors deduced from the presence of their echoes in the equatorial electrojet heights and discuss the methodology of meteors detection in the 50 MHz coherent back-scatter radar data.



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