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Characteristics of polar mesosphere summer echoes observed with different elevation angle

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Polar Mesosphere Summer Echoes (PMSE) are very strong radar echoes from altitudes near the polar summer mesopause [1-4]. Polar summer mesopause regions belongs to weakly ionized dusty plasma, which need to be analyzed in different observing direction, aspect sensitivity of PMSE was studied with the EISCAT VHF 224 MHz radar with different elevation angles in 2010. The experiment results in the four days are statistically analyzed. The statistical experiment results show there have obvious aspect sensitivity in three days. Here we give one example on 13 July 2010 observed by EISCAT (European Incoherent Scatter Scientific Association) VHF Radar. The strongest echoes do not occur in vertical direction of radar when PMSE have stratified phenomenon. The experimental results suggest that reflection will show greater effects on PMSE when there are dual or multilayer PMSE echoes.

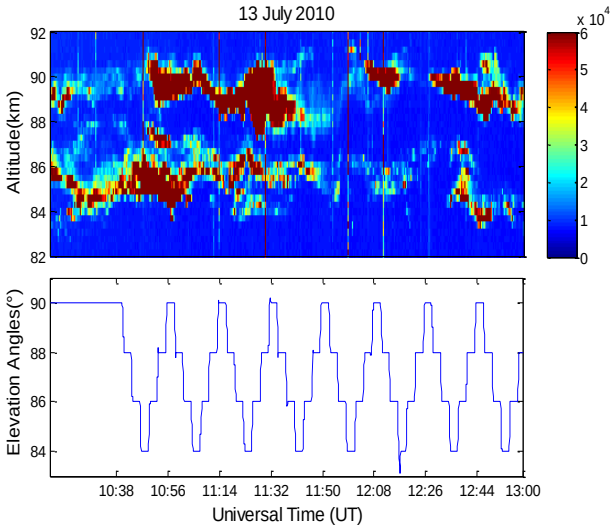

Fig 1. PMSE observed with the EISCAT VHF radar on 13 July 2010

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