

## Study on mesospheric scattered echoes with the MU radar

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We have been carrying the mesospheric observations with the MU radar continuously. Variations and distributions of mesospheric echoes cannot be explained only by the existence of electrons. We assume that echoes are due to both electron distributions and neutral turbulence. Fluctuations of electron density are assumed to obey the power law with spectral index  $-5/3$  and  $-7$ , which is the same as the theory of neutral turbulence. In this way we estimated the radar volume reflectivity with numerical models. The result showed that estimated reflectivity increases at the altitude 70-80 km and decreases with height above 80 km. This estimation agrees with the observational reflectivity and implies the fact that the minimum scale of turbulence is concerned with mesospheric echoes.