

# **Overview of electromagnetic waves due to thunderstorm activity and observed by DEMETER**

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## **Abstract**

DEMETER is a low orbiting satellite (660 km) which was operating for more than six years to study ionospheric perturbations in relation with seismic and anthropogenic activities. It recorded wave and plasma parameters all around the Earth (except in the auroral zones) at two different local times (10.30 and 22.30 LT). This paper will present the emissions recorded by this low altitude satellite in relation with the thunderstorm activity. Many different phenomena have been observed. It includes: - whistlers with different patterns, - particle precipitation by whistlers, - interaction with the lower hybrid frequency, - observations of MF pulses, - interaction between thunderstorm activity and man-made activity, - triggered emissions by whistlers, and - emissions observed at the time of very powerful lightning strokes.