

# **METEOROLOGICAL INFORMATION IN GPSRO REFLECTED SIGNALS**

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Vertical profiles of the atmosphere can be globally sensed thanks to the radio-occultation technique. However, the lowest layers of the atmosphere are less accurately extracted. We outline here how supplemental meteorological information close to the surface can be extracted whenever reflected signals are available. A relevant description of the low layers is necessary to improve the initial conditions of the meteorological systems. Thus, the knowledge of such surface properties would be of great interest for future data assimilation experiments.

We use a ray tracing method which consists in analyzing electromagnetic waves propagation trajectories over three-dimensional information of the field of refractive index. Then an iterative perturbation approach can be used to perform an inversion computation and extract some supplemental information to the solution of the inversion of the direct propagation signal.

The methodology is applied on one reflection case, identifying the relevant contribution of the lowest layers of the atmosphere and deducing its subsequent impact towards data assimilation.