An overview of the GPS RO inversions methods

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Radio occultation (RO) remote sensing emerged from planetary studies where almost any information about planetary atmosphere was valuable. In the Earth's atmosphere, the mean state is well known and the problem is to accurately measure its relatively small variations for weather and climate applications. While RO was first time proposed for the Earth's atmosphere in 1968, it was first time implemented in 1995, with the use of GPS which allowed sufficient accuracy of measurements. In this presentation we will give an overview of the dual frequency GPS RO measurements and their conversion into other observables assimilated by atmospheric models. We will consider different inversion approaches, use of ancillary data, advantages and disadvantages of the use of different observables, used assumptions and approximations and resulting representativeness errors.