CANCELLED FROM METOP/GRAS TO FUTURE RO AND NEXT-GENERATION OCCULTATION IN EUROPE: THE ROLE OF ESA

P. Silvestrin *(1)
(1) ESA ESTEC, Noordwijk, NL

The European Space Agency (ESA) initiated activities in the field of Earth observation (EO) applications of GNSS in the early Nineties. These have matured into various capabilities: at scientific/user level, technological level and as space systems that are now deployed or are about to be. The talk will briefly recall mainly the technical achievements, e.g. the signal processing devices at the core of the European precise GNSS receivers and the GRAS (GNSS Receiver for Atmospheric Sounding) instrument flying on the MetOp satellites, and their key in-orbit results, such as the high performance GRAS occultation profiles and the precise orbit estimation of the low-flying GOCE gravity mission.
This experience spanning almost two decades, the evolution of technology and the realization of new navigation systems, including the European GALILEO systems, have allowed defining new objectives for EO GNSS applications and techniques. On-going and planned efforts will be reviewed, including: new high-performance components to enable industry to develop even more capable instruments at the service of the operational and scientific EO community; the next-generation of European GNSS radio occultation instruments, in particular with regard to the needs of the follow-on mission to MetOp in the frame of EUMETSATs PostEPS programme, and supporting analysis tools. An outlook on the future possible implementation of further radio occultation observation opportunities in the frame of new European operational missions will also be included.