



Session

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Understanding the ionospheric's state by the Generalized Linear Models

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The Ground Based Augmentation System (GBAS) in Brazil is important for air navigation but can be the unavailable for a long time by external factors which affect the ionosphere's state. The literature provides the variables that most likely influence this unavailability, such as magnetic latitude, time, solar activity, and space weather conditions. However, we are not aware of any probabilistic model based on these variables that could be applied to improve the availability of GBAS systems. This work explores that venue by searching for parsimonious models based on generalized linear models. These models are designed to operate at aerodromes in Brazil, where GBAS systems have limited use. They incorporate long term measurements of ionosphere instabilities in that region. A well-designed model is expected to provide reliable probabilities of observing harmful scintillation in the ionosphere, potentially enabling the safe use of GBAS during the night at low latitudes when conditions of sufficiently low probability are met.

Scientific Session: Ionosphere and Upper Atmosphere

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