

## Comparison of plasma bubble drift velocity observed by ground GPS and those simulated by GAIA model

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Knowledge of the zonal drift velocity of plasma bubbles is important for real-time forecast of plasma bubble occurrence. In the equatorial region, the ExB drift is responsible for the eastward motion of the background plasma. It is considered that the plasma bubble travels at the same speed as the background plasma. In this study, we estimate the drift velocity of irregularity associated with the equatorial plasma bubble using three single frequency GPS receivers at the equatorial atmospheric radar (EAR) site at Kototabang in Indonesia (0.20 S, 100.32 E; geomagnetic latitude 10.6 S). This velocity is then compared to the zonal drift velocity reproduced by the GAIA model, to examine the consistency of the two. If the consistency is good, the GAIA model can be used to predict the arrival time of plasma bubbles at locations eastern of Kototatabang. The predicted arrival time of plasma bubbles are verified by using the GPS scintillation observation at Pontianak (0.02 S, 109.3 E; geomagnetic latitude 9.8 S), located 800 km east of Kototabang.