Plasma blobs and bubbles concurrently observed by muti-instruments in low latitude ionosphere in the Asian-Oceanian sector

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With simultaneous ionospheric observation data from ROCSAT-1 Satellite and ionosondes, three cases of concurrent plasma blobs and bubbles were observed around 22:30 in the same magnetic meridian at low latitude in Asian-Oceanian sector. Plasma blobs insitu-observed were near 600 km height, above the ESFs observed by ionosondes. Scintillations were also observed near the same magnetic meridian. Considering that both plasma bubbles and blobs are field-aligned elongated structures, these concurrent detections of plasma blobs and bubbles provide direct observational evidence for the proposed blob formation in the intermediate stage of plasma bubble generation.