Imaging observation of airglow ripple structures at four wavelengths in the mesopause region

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As part of the PSMOS campaign four high performance all-sky CCD imagers have been operated at Shigaraki MU radar observatory (34.9E, 136.1N) for the new moon period from January to March 1998 to obtain simultaneous nightglow images at four different altitudes in the mesopause region. The four imagers measure OH band (altitude: 87km), O2 band (94km) and 557.7nm (96km) and 589.3nm (Na, 90km) emissions. During the campaign, we observed 'ripples' which were small wave structures with a horizontal wavelength of 5-15km. Using the OH airglow images obtained with a time resolution of 30s, we discuss horizontal phase propagation of the ripples. Vertical propagation of the ripples is also investigated using the other three emissions obtained with a time resolution of 2min.

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