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Night airglows in Venus atmosphere and dynamics around 100 km from VIRTIS-M VEX data. Comparison with the Earth atmosphere.

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Analysis of the O_2 1.27um night airglow in the Venus atmosphere is presented. Night glow is extremely variable in space and local time. However, averaged over all nadir observations for Southern hemisphere and over all nadir observations for Northern hemisphere it allows to study a global circulation around 100 km altitude. The global circulation at these levels may be presented by SS-AS, zonal retrograde, as well tides and waves may influence nightglow distribution. In Southern hemisphere in the latitude range 20-60S a maximum emission is found at 22 - 23 h local time, which correlates with minimum horizontal wind speed (downward flow) and minimum emission is observed at 2-4 h, which correlates with maximum of horizontal wind speed. In Northern hemisphere maximum emission is observed at 1 h in latitude range from equator to 40-50°N. It indicates to existence of superposition of SS-AS and zonal retrograde circulation (in the case of SS-AS maximum emission should be found at midnight). For Northern hemisphere there is no simultaneous wind measurements. Thin O_3 layer (Montmessin et al. 2011) from SPICAV data was found in Southern hemisphere for latitudes and local time where high O_2 airglow (and consequently OH) intensity was also found by VIRTIS. The O_2 night airglow of Venus and Earth are compared.