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Drivers of inter-annual variability in the planetary wave field in the Antarctic MLT.

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Variations in the horizontal wind field with periods between 2 and 30 days are presented, derived from 12 years of meteor wind data recorded with a SuperDARN radar located at Halley, Antarctica (76ºS, 27ºW) between 1996 and 2007. The large year-on-year variability seen in the data is discussed: An enhancement in summer time planetary wave activity in the Antarctic MLT is seen during periods when the equatorial quasi-biennial oscillation in the upper stratosphere is in the westerly phase, suggesting a coupling with the winter hemisphere. In addition, positive correlations between planetary wave amplitudes and geomagnetic activity are observed especially in the shorter period planetary waves; whereas no significant relationship is seen with F10.7.