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Meteor radar temperatures measured over Collm (51.3° N,13° E)

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Since August 2004 a SKYiMET Meteor-Radar is operated at Collm Observatory, Germany. Using the method of radar-meteor decay times, temperatures at a height of 90 km can be derived, which is the peak altitude of the meteor layer. This method provides daily mean temperatures. Increasing the time resolution to hourly means by an accumulation algorithm of 7 days and running the standard routine, tidal waves in the temperature were detected. A Fourier analysis of the time series reveals the amplitudes and phases of the diurnal, semidiurnal and terdiurnal tides at the peak altitude of the meteor layer. So the creation of a tidal climatology on the basis of monthly data was achieved. The diurnal tide peaks at an amplitude of 5 K in April and has a minimum of 2 K in October. The rest of the year the amplitude remains between $2.5 - 4$ K. For the semidiurnal tide the amplitudes stayed between $3 - 7.5$ K during the year. The large summer maximum shows values of 7.5 K and the two minima in the equinoxes of reach 3 K. A comparison with the COMMA-LIM model shows good agreement of the seasonal change of the amplitudes for both tides, but the absolute values of the semidiurnal tide amplitudes differ with model results.