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Long-period anelastic and short period equatorial angular momentum functions during the CONT05 campaign

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Anelasticity of the mantle causes the Chandler frequency and the Love number k to be complex quantities. Both the Chandler Wobble frequency and excitation functions for polar motion depend on the same physical assumptions and numerical parameter values. When considering the impact of anelasticity on atmospheric excitation, the coefficients of the commonly used effective equatorial atmospheric angular momentum (AAM) functions are affected by 3%. These AAMs are probably accurate to 1% for periods near the Chandler Wobble period, assuming that the Earth has only one sharp peak at that eigenfrequency. Results are sensibly less accurate at shorter periods, where the broad band equations of polar motion are needed. The question is: how would these equatorial AAMs be affected if the Earth had a multiple-peak spectrum near the usually accepted Chandler period of 433 solar days? The long-period anelastic and short period equatorial AAMs from atmospheric ECMWF data have been correlated with polar motion data for the CONT05 campaign from Very Long Baseline Interferometry observations and with the IERS C04 series.