

Diurnal variation in the Earth's background free oscillations

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Earth's background free oscillations are now considered to be excited by atmospheric/oceanic loading. We analyze old IDA and IRIS/IDA records to detect possible time variations in background free oscillations. In a frequency domain analysis we have found a systematical diurnal variation at four low-noise IRIS/IDA stations, where average noise level is below $10^{**}(-18)m^{**2}/s^{**3}$. The excitation levels are relatively high in the time intervals around 12 and 18 o'clock in UT, and relatively low around 0 and 6 o'clock. The variation is so subtle that it is unclear or absent at old IDA and other IRIS/IDA stations, which are relatively noisy. Although the present result is preliminary, it strongly supports the atmospheric/oceanic origin hypothesis.