



Validating orbitally-tuned age models

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Orbital-tuned timescales play an important role for many studies in paleoclimatology and integrated stratigraphy. A reliable test for validity stand-alone astronomically-tuned time scales has however not yet been established. Shackleton et al., (1995) suggested that precession amplitude modulation by eccentricity is the best criterion available for a successful tuning. However, Huybers & Aharonson, (2010) oppose this approach and "conclude that the presence of eccentricity-like amplitude modulation in precession-filtered records does not support the accuracy of orbitally tuned time scales". We discuss some approaches to circumvent the potential problem of frequency modulations during the tuning process, thereby allowing the use of amplitude modulations for timescale evaluation. This method is discussed using a geological dataset.