

Atmos. Meas. Tech. Discuss., referee comment RC1
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Comment on amt-2021-74

Weibiao Chen (Referee)

Referee comment on "ALADIN laser frequency stability and its impact on the Aeolus wind error" by Oliver Lux et al., Atmos. Meas. Tech. Discuss.,
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The long term laser frequency stability is first reported for spaceborne high energy solid-state laser. The difference performance between under-ground and in-orbit is implemented. The enhanced frequency noise due to the satellite's reaction wheels is discovered. Two year's global frequency stability of laser is present. It is very significant for future frequency-stability spaceborne laser development. Aeolus wind error in both Mie and Rayleigh Channel due to the enhanced frequency noise is analyzed. The wind error can be accepted for the ECMWF mode.

It is better that the mechanics of the frequency noise enhancement in the master oscillator due to micro-vibration is given.