

Editor's comments on the revised "Using a network of temperature lidars to identify temperature biases in the upper stratosphere in ECMWF reanalyses" by Graeme Marlton et al.

General point: please be careful to write in a consistent tense throughout – you mix past and present tense freely in the manuscript. I recommend using the past tense when referring to agreement between datasets at dates in the past.

p.4 l.17. 'The first' needs to be followed by 'the second'

p.6 l.20 Surely the evolution of IFS is due to R+D, not the other way round

p.6 l.28 'significantly affected **by**'

p.7 l.3 'To ensure that the comparison is accurate, the lidar's geometric height coordinates were first converted to geopotential height'

p.7 l.7 'Vertical resolution **of**'

p.7 l.13 The sentence 'ERA-interim at the points studied here has a cold bias in the region of -3 to -4 K.' is completely inconsistent with fig.2 and should be deleted.

p.7 l.21. 'Both the warm bias near the model top and the cold bias between 1 hPa and 10 hPa are present throughout the year, with the cold bias being strongest at all sites between November and February.'

p.8 l.19 'could explain' would be more accurate. Also would 'difference in the sign of the results' not be better than 'polarity', which is something I associate with magnets?

p.8 l.30 'vertical resolution **of ERA5**'

p.9 l.16 'and 10 hPa, **but not as good as that with the lidar**'

p.9 l.21 'of 3 K, **while** at 1 hPa'

p.9 l.35 original text is better

p.10 l.25 delete 'that the introduction of COSMIC GPSRO showed'

p.10 l.29 'since' rather than 'given'; 'in 1998' rather than '1998'

p.11 l.14 'affected' not 'may have an affect on' ; 'have increased' not 'increase'

p.11 l.23 Replace 'Given ... height' with 'The abrupt and consistent reduction of the warm bias at all sites during 1998 corresponded with the advent of NOAA-15 AMSU-A data, suggesting that assimilation of this data stream caused the reduced bias.'

p.11 l.26 '**was** most dominant'

p.11 l.27 'caused' rather than 'could be the reason for'

p.12 l.3 'was reduced'

p.12 l.6 'appears to have reduced the'

p.12 l.19 'comparisons **between** ERA'

p.12 l.24 **was** within'

p.12 l.33 what does the word 'saturate' mean here? Please find a more suitable alternative

p.13 l.4 'effect' not 'affect'

p.13 l.14 'reference with which to compare other reanalyses'

p.13 l.23 'have made high vertical resolution measurements for nearly 30 years'