Supplementary Materials for

Intercomparison of wind observations from ESA's satellite mission Aeolus, ERA5 and radiosonde over China

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Figure S1

Figure S2

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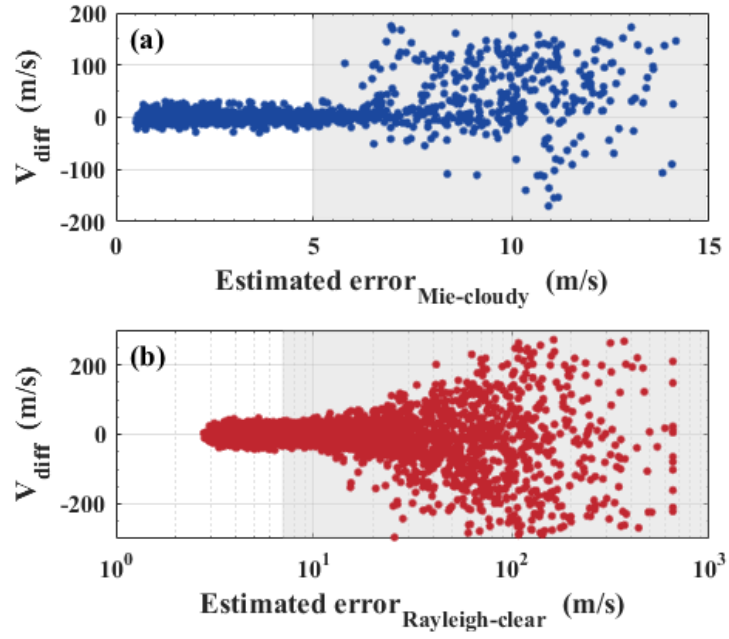
Figure S1. Difference between the Aeolus and RS winds as a function of estimated errors for (a) Mie-cloudy winds and (b) Rayleigh-clear winds. Gray areas indicate the data with errors larger than 7 m/s (Rayleigh) or 5 m/s (Mie), which in the present analysis are considered as invalid observations.
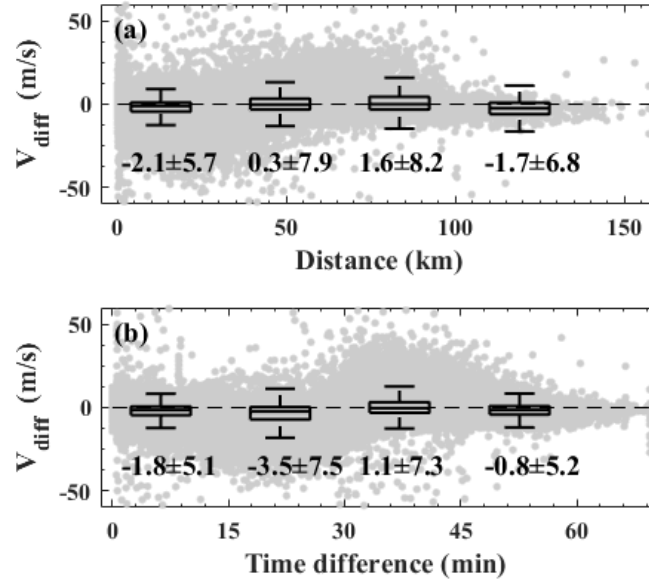
Figure S2. Difference between the ERA5 and RS zonal winds as a function of (a) time difference and (b) distance. Gray dots indicate the corresponding sample points. The text labels represent the mean difference and SD of the differences between ERA5 vs RS in the corresponding box. The box size shows the Upper margin, upper quartile, median, lower quartile, lower margin of each bin..
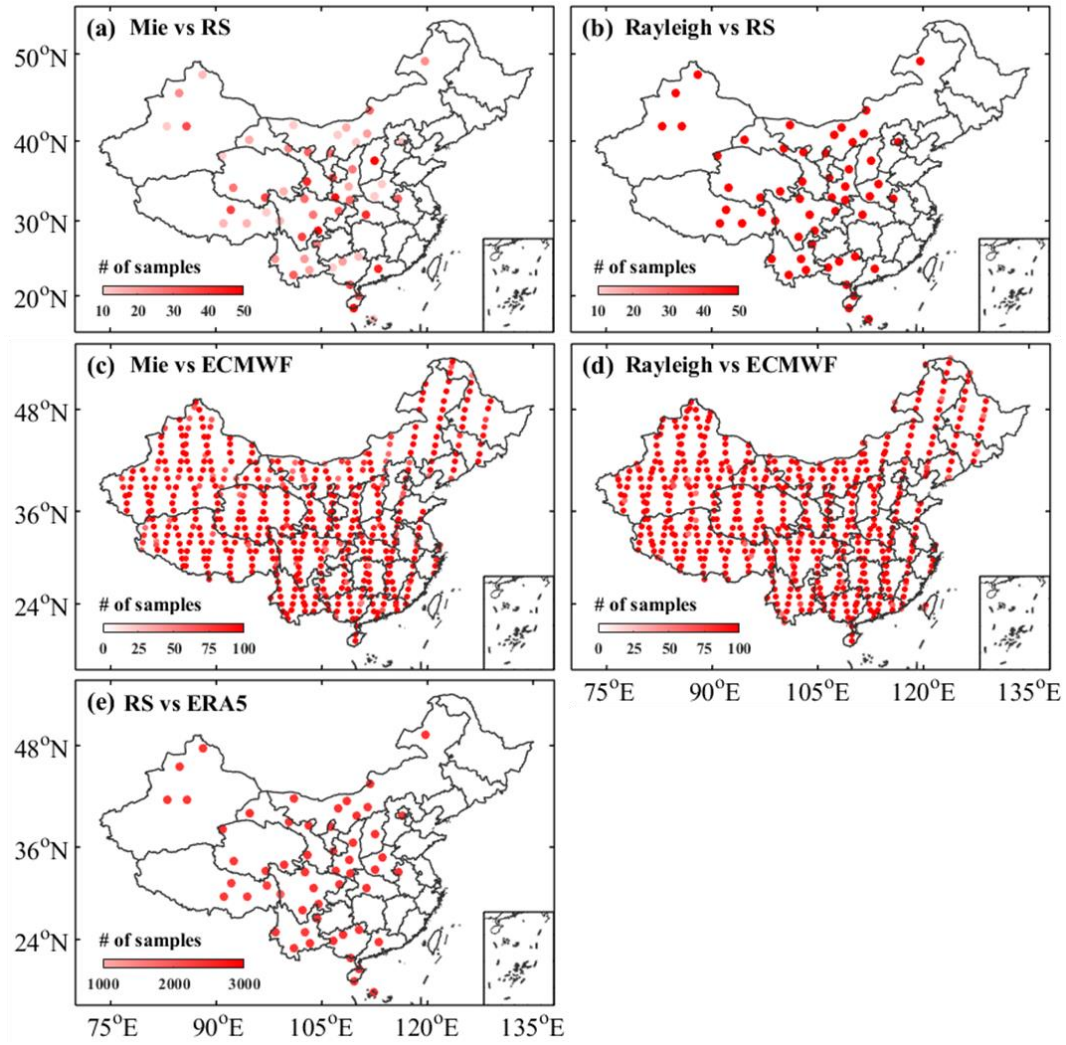
Figure S3. Geographic distribution of the number of paired data samples between the (a) Mie-RS, (b) Rayleigh-RS, (c) Mie-ECMWF, (d) Rayleigh-ECMWF and (e) RS-ERA5 winds. Note that the radiosonde sites that have less than 10 paired samples are not shown.
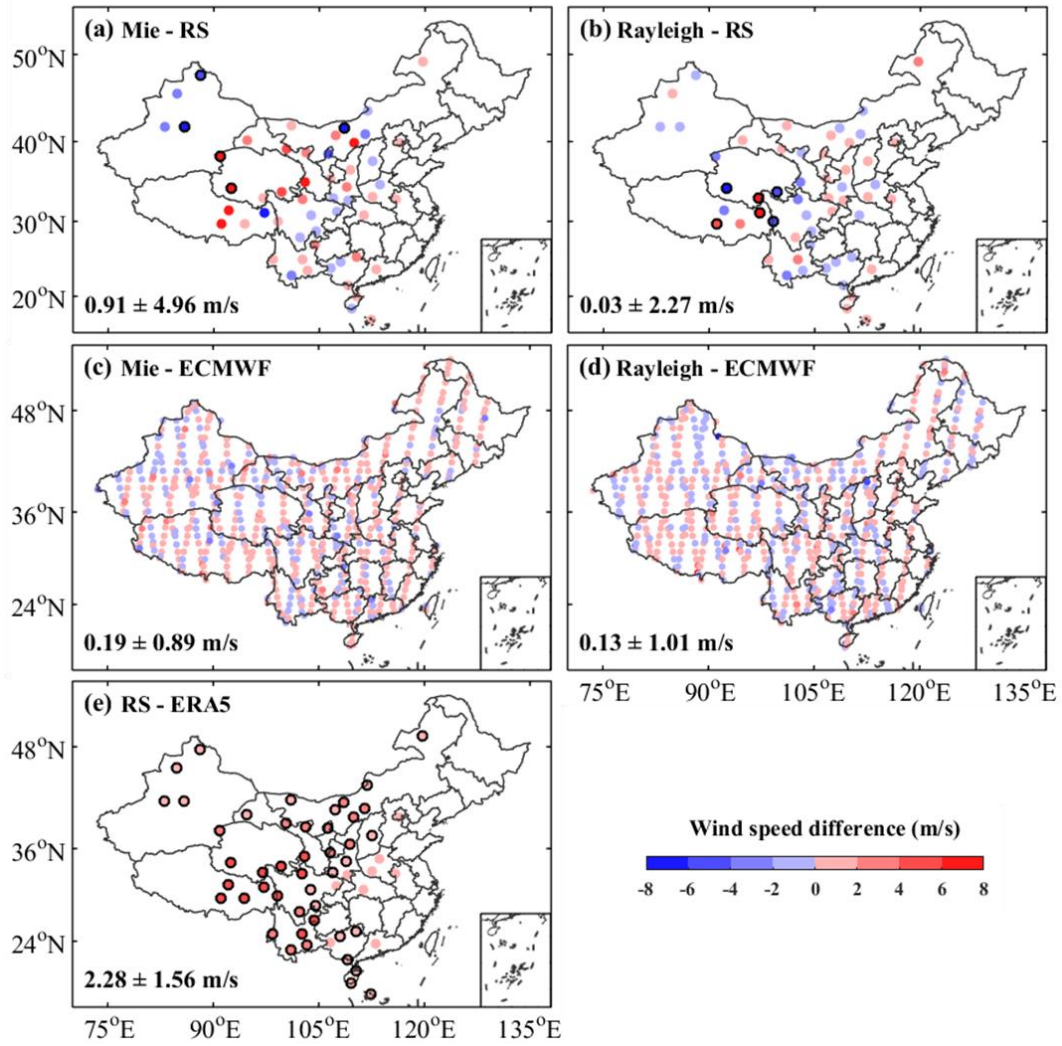
Figure S4. Geographic distribution of HLOS difference between the (a) Mie-RS, (b) Rayleigh-RS, (c) Mie-ECMWF, (d) Rayleigh-ECMWF and similar for the difference between RS-ERA5 zonal winds (resp. e) during all time. The black circles indicate that the site passed the statistical significance difference test (P<0.05). The numbers in each map represents the mean bias and SD of the colored values on the map.