Supplement of

Size-Resolved Dust Direct Radiative Effect Efficiency Derived from Satellite Observations

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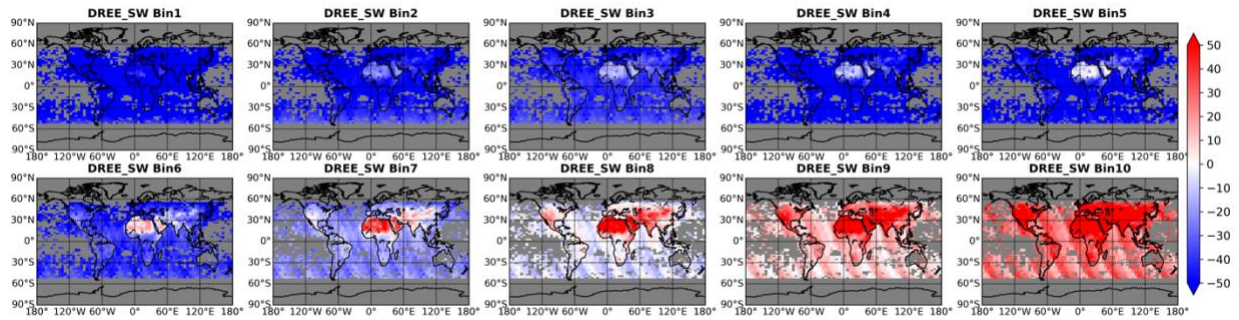# 1. Demonstration of monthly-mean *size-resolved* DREE dataset

Figure S1. Global distribution of monthly-mean DREE^{SW} of MeanSWRI-Spheroid dust model at TOA for June obtained from the *size-resolved* DREE dataset. Grey area indicates area without DREE derivations (e.g., DAOD retrieval is not available or $DAOD^{532nm} <= 0.01$ over the area). The strip pattern seen in large size bins (e.g., Bin7~Bin10) is due to the variation of surface albedo with SZA.
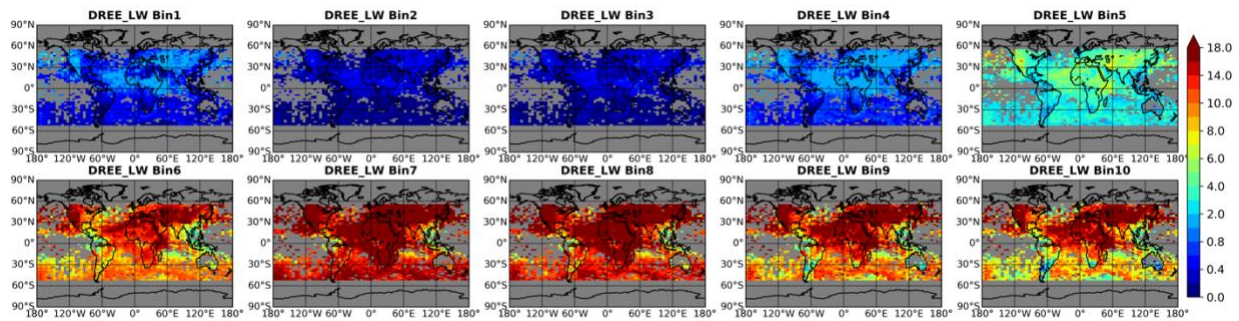

Figure S2. Global distribution of monthly-mean DREE^{LW} of MeanLWRI-Spheroid dust model at TOA for June obtained from the *size-resolved* DREE dataset. Grey area indicates area without DREE derivations (e.g., DAOD retrieval is not available or $DAOD^{532nm} <= 0.01$ over the area).