Dataset Title: Laser In Situ Scatterometer and Transmissometer-based Particle Size Distributions (LISST PSDs) from suspended materials in bottle samples collected at Station ALOHA in June 2019 onboard R/V Kilo Moana cruise KM1910

PIs: Angelicque White, Sara Ferron, and Erica Goetze

In folder **"raw_data":**

Filename	Description of dataset	Variables in dataset	Description	Units
ringarea_1421.asc	Sequoia-provided ringarea file for LISST serial number 1421. This is an input of Sequoia's 'getscat.m' processing script in 'lisst_process_susp.m'			
Example: 'susp_5m_rep1.asc' 'susp_5m_rep1.log' 'susp_5m_rep1.psd' Where 'susp' identifies the suspended samples, '5m' = (depth of sample, and alternatively 75m, 150m, and 300m), and 'rep1' = first replicate (and alternatively rep2 or rep3).	Raw signal obtained when running suspended samples on Sequoia's lisst.exe, during deployment. The log files are called by Sequoia's 'getscat.m' in 'lisst_process_susp.m'			
susp_blank_*.asc, susp_blank_*.log, susp_blank_*.psd, where * = 1 or 2 (identifying replicates)	Raw signal obtained when running suspended blank samples on Sequoia's lisst.exe, during deployment. See Cael and White (2020) for details.		susp_blank_1.asc is used in 'lisst_process_susp.m', but using the average or replicate #2 does not alter the results	

In folder **“susp_mat_files”:**

Filename	Description of dataset	Variables in dataset	Description	Units
“susp_*m_rep**.mat”, where * = depth (5, 75, or 150m), and ** = replicate number (1, 2, or 3)	Suspended PSDs. These are outputs of LISST inversion (processed using Sequoia’s proprietary Matlab code) for spherical particles and computed volume concentrations for each of the 32 size bins for each of the suspension measurements (~20 scans for each replicate and depth). Files generated using ‘lisst_process_susp.m’. Final processed data are named “corr_vd”	cscat,	Raw scattering corrected for ringarea, output of Sequoia’s getscat.m	
		data_out	raw data file, converted from binary, see LISST 100x Sequoia’s manual for additional information	32 scattering bins + 8 additional ancillary variables
		dias	median particle diameter per bin	micrometer
		matlab_date	Number of seconds since 1-Jan-1970 00:00:00 UTC	UTC
		scat	raw scattering signature, output of Sequoia’s getscat.m	Digital counts

		vd	Volume concentration, output of invert.m	Microliter per L for each of the 32 diameters
		corr_vd	Corrected volume concentration, output of Sequoia's vdcorr.m	Microliter per L for each of the 32 diameters
		tau	optical transmission, output of Sequoia's getscat.m	Inverse meters