

CCN Contrasts Below and Above

California Stratus

James G. Hudson

Desert Research Institute

Reno, Nevada 89512-1095

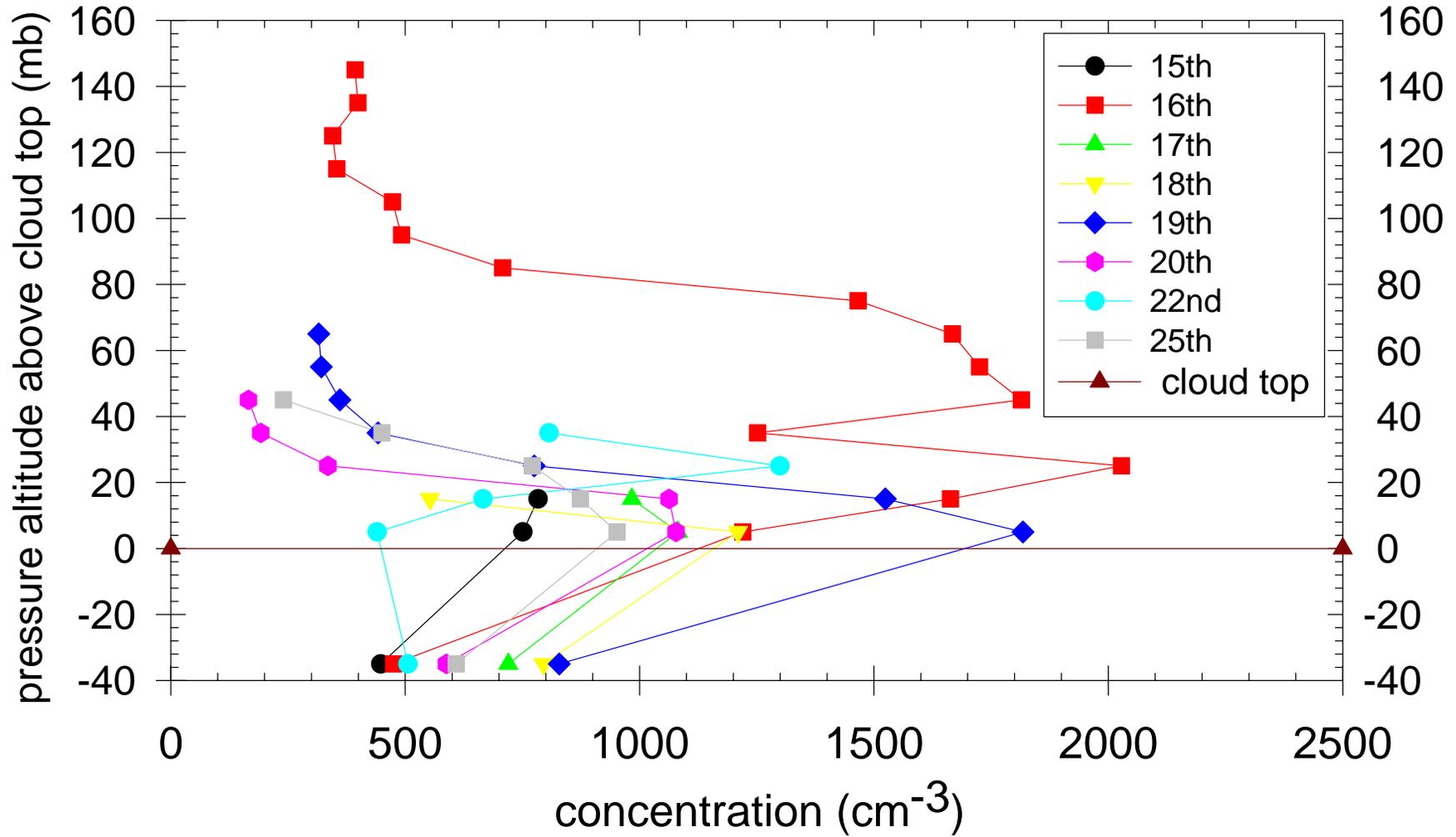
HUDSON@DRI.EDU

The major features of the Desert Research Institute (DRI) cloud condensation nuclei (CCN) measurements during the Marine Stratus Experiment (MASE) was

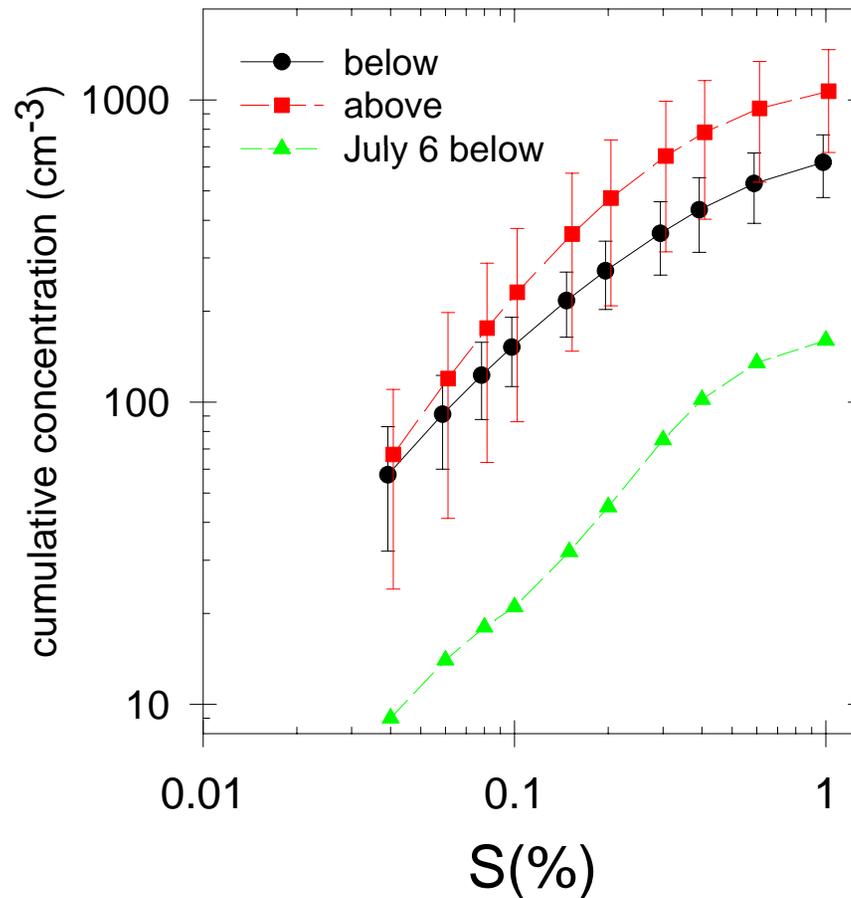
1) the vertical variability of the concentrations higher above than below cloud.

2) the consistently high concentrations that were uncharacteristic of the marine environment.

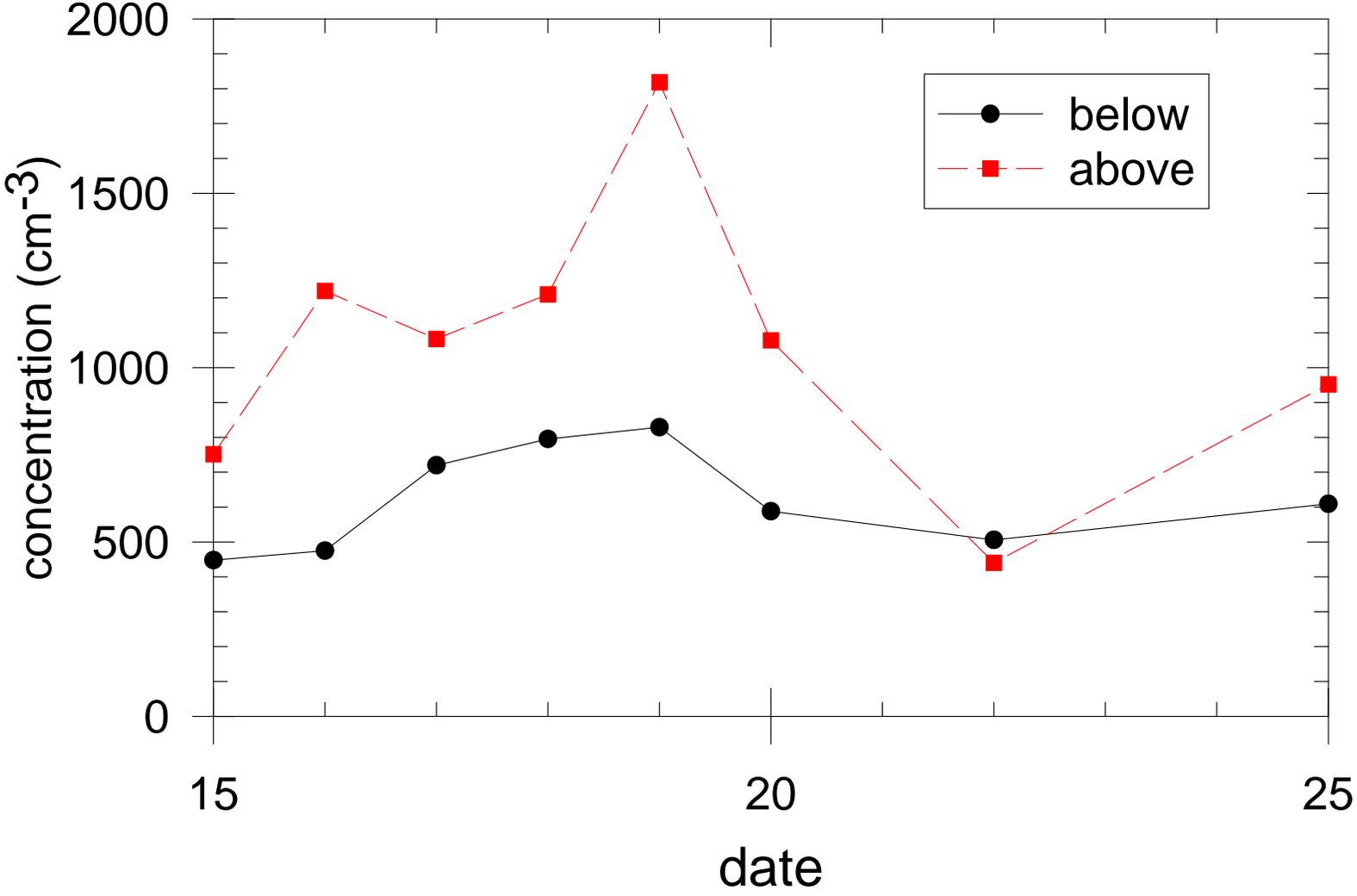
Average concentrations in 10 mb altitude bins,
below cloud (-35 mb) and at distances above cloud
top for the eight flights with unbroken polluted stratus
CCN 1%S



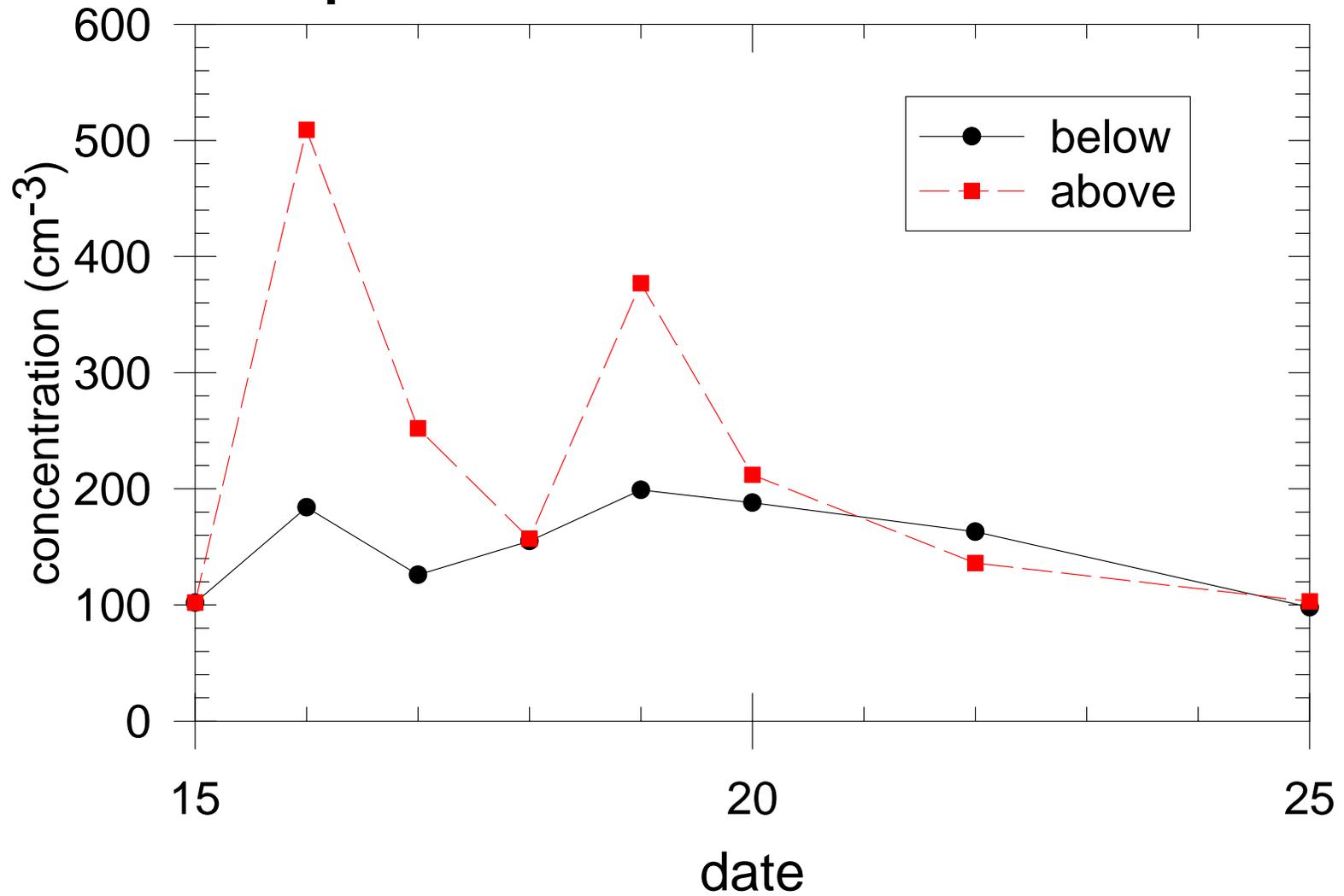
Average spectra below and just above cloud for the eight flights with unbroken polluted low stratus July 15, 16, 17, 18, 19, 20, 22, and 25 and maritime July 6



**flight-averaged concentrations for
the eight flights with unbroken
polluted low stratus CCN 1.00% S**



flight-averaged concentrations for the eight flights with unbroken polluted low stratus CCN 0.10% S

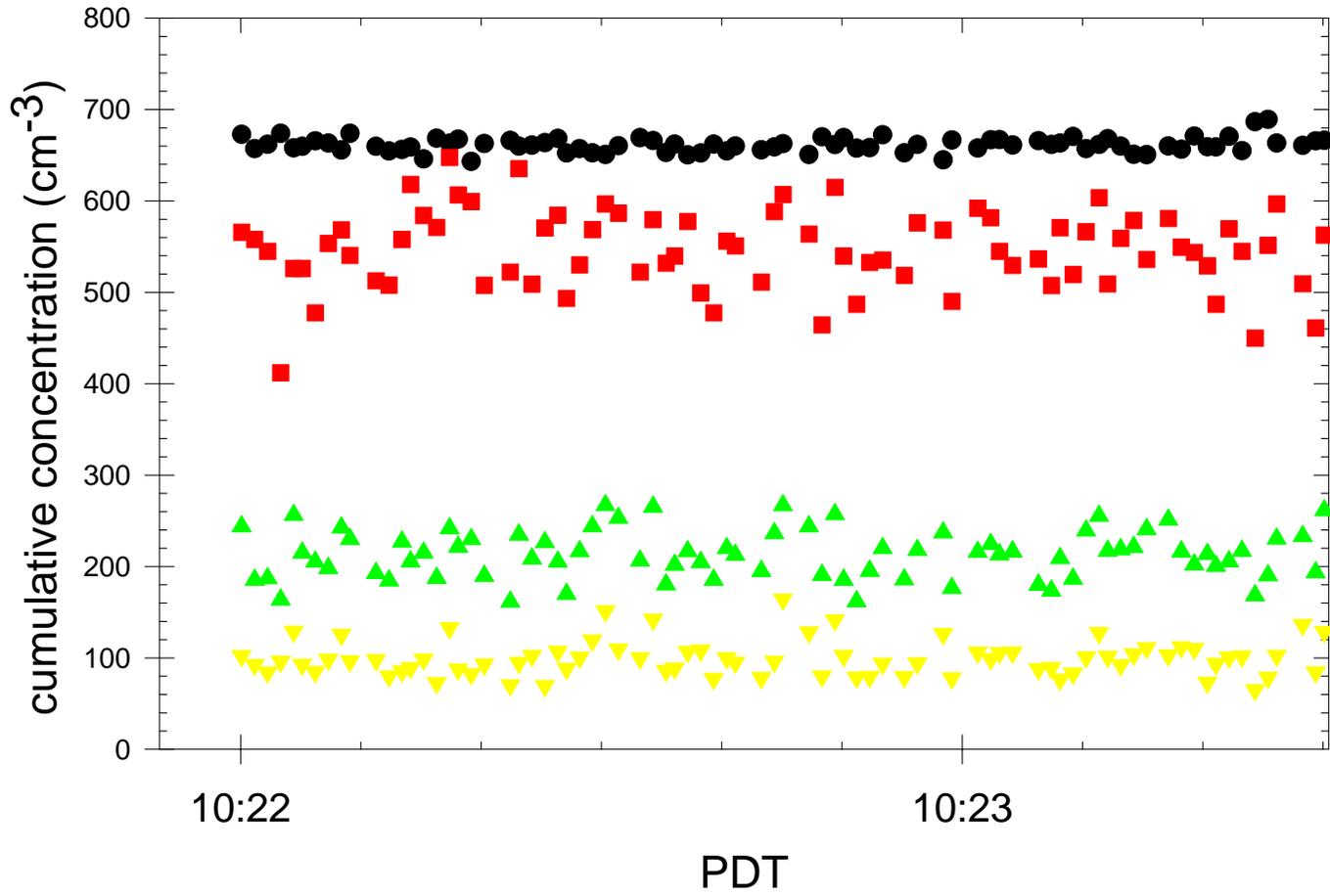
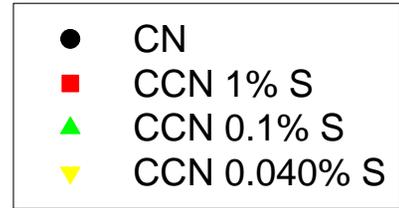


date	July 6 maritime	Below ave. of 8 flights with low polluted stratus	Above ave. of 8 flights with low polluted stratus
CN	172	893	1240
1.0%	160	614	1069
0.10%	21	149	231
0.04%	9	57	67

date	16	17	18	19	20	22	25	ave
CN	0.41	0.50	0.17	1.23	0.12	0.12	0.50	0.56
1%	0.37	0.30	0.15	1.09	0.20	0.16	0.56	0.38
0.1%	0.25	0.35	0.20	0.43	0.29	0.30	0.58	0.40
0.04%	0.34	0.44	0.34	0.51	0.34	0.39	1.22	0.58

Relative variability of the below cloud concentrations expressed by the standard deviation divided by the mean concentrations.

July 23, 2005



	23 July 10:22:01-10:22:46				25 July 12:14:10-12:14:30			
	ave	sd	sd/ ave	[sd/ave]/ [(cts) ⁻⁵ /cts]	ave	sd	sd/ ave	[sd/ave]/ [(cts) ⁻⁵ /cts]
CN	660	7.0	0.011	1.12	710	5.0	0.007	0.77
1.0%	550	46.4	0.084	1.14	345	35.4	0.103	1.10