

Case study	N	R^2	RMSE	MBE	Standard	Standard	Standard
			(ppm)	(ppm)	deviation	deviation	deviation
					R^2	RMSE	MBE
CO ₂ models							
Best CO ₂ model from Casey et al. (2018)							
ANN with inputs: eltCO2, temp, absHum							
SJ Basin summer 2015	2	0.65	8.42	−0.62	0.00	1.81	1.41
BAO summer 2015	2	0.75	9.98	−2.60	0.05	13.00	13.89
BAO summer 2016	2	0.69	54.38	48.37	0.05	13.00	13.89
GRET fall 2016	2	0.74	42.37	39.58	0.02	2.44	2.57
GRET spring 2017	2	0.83	6.31	0.59	0.03	0.13	2.61
Simple model (single gas sensor)							
LM with inputs: eltCO2, temp, absHum							
SJ Basin summer 2015	2	0.71	7.84	0.27	0.01	1.43	0.42
BAO summer 2015	2	0.69	10.62	−1.26	0.06	1.52	10.67
BAO summer 2016	2	0.73	11.82	0.73	0.06	1.52	10.67
GRET fall 2016	2	0.82	8.62	−3.46	0.00	0.69	1.45
GRET spring 2017	2	0.55	9.88	−0.33	0.03	0.29	1.91
Models optimized for case studies							
SJ Basin summer 2015	2	0.72	7.45	−0.11	0.04	2.06	0.31
BAO summer 2015	2	0.80	8.85	−2.29	0.10	6.47	7.08
BAO summer 2016	2	0.73	11.82	0.73	0.06	1.52	10.67
GRET fall 2016	2	0.82	8.62	−3.46	0.00	0.69	1.45
GRET spring 2017	2	0.83	6.31	0.59	0.03	0.13	2.61