

ku_enm: calibration results

- [Brief description of the model calibration and selection process](#)
- [Model calibration statistics](#)
- [Best models according to user-defined criteria](#)
- [Model performance plot](#)
- [Performance statistics for all models](#)

Brief description of the model calibration and selection process

This is the final report of the ku_enm_ceval function implemented in the ku_enm R package.

In all, 1054 candidate models, with parameters reflecting all combinations of 17 regularization multiplier settings, 31 feature class combinations, and 2 distinct sets of environmental variables, have been evaluated. Model peformance was evaluated based on statistical significance (Partial_ROC), omission rates (OR), and the Akaike information criterion corrected for small sample sizes (AICc).

Table 1. Parameters of the candidate models.

	Parameters
Regularization multipliers	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 2, 3, 4, 5, 6, 8, 10
Feature classes	l, q, p, t, h, lq, lp, lt, lh, qp, qt, qh, pt, ph, th, lqp, lqt, lqh, lpt, lph, lth, qpt, qph, qth, pth, lqpt, lqph, lqth, lpth, qpth, lqpth
Sets of predictors	Set1, Set2

The results presented below can be found in the calibration output folder if desired for further analyses.

Model calibration statistics

In the following table is information about how many models met the four selection criteria that this function uses.

Table 2. General statistics of models that met distinct criteria.

Criteria	Number_of_models
All candidate models	1054
Statistically significant models	1021
Models meeting omission rate criteria	830
Models meeting AICc criteria	4
Statistically significant models meeting omission rate criteria	797
Statistically significant models meeting AICc criteria	4
Statistically significant models meeting omission rate and AICc criteria	4

Best models according to user-defined criteria

The following table contains the best models selected according to the user's pre-defined criteria.

Note that if the selection criterion was "OR_AICc", models below the omission rate and among them those with lower AICc values, delta AICc values were recalculated only among models meeting the omission rate criterion (*E*).

Table 3. Performance statistics for the best models selected based on the user's pre-defined criteria.

Model	Mean_AUC_ratio	Partial_ROC	Omission_rate_at_5%	AICc	delta_AICc	W_AICc	num_parameters
M_0.9_F_lpt_Set2	1.696	0	0	478.202	0.000	0.166	8
M_0.1_F_lq_Set2	1.737	0	0	478.630	0.428	0.134	5
M_0.2_F_lq_Set2	1.728	0	0	479.510	1.308	0.086	5
M_1_F_lpt_Set2	1.693	0	0	479.643	1.440	0.081	8

Model performance plot

The figure below shows the position of the selected models in the distribution of all candidate models in terms of statistical significance, omission rates, and AICc values.

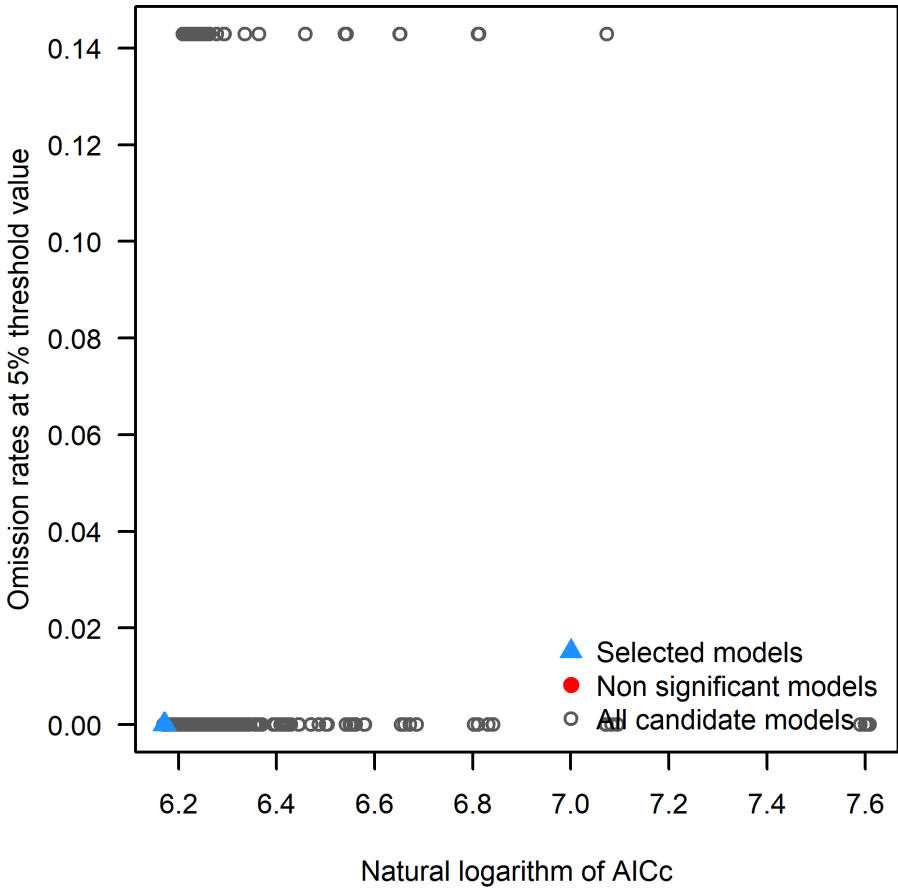


Figure 1. Distribution of all models, non-statistically significant models, and selected models in terms of the user's pre-defined criteria.

Performance statistics for all models

Following are the performance statistics for all candidate models (a sample if more than 500 models). See file calibration_results.csv for the complete list.

Table 4. Performance statistics for all candidate models.

Model	Mean_AUC_ratio	Partial_ROC	Omission_rate_at_5%	AICc	delta_AICc	W_AICc	num_parameters
M_0.1_F_I_Set1	1.521	0	0.000	511.268	33.066	0.000	8
M_0.1_F_I_Set2	1.529	0	0.000	500.064	21.862	0.000	3
M_0.1_F_q_Set1	1.697	0	0.000	482.234	4.032	0.000	8
M_0.1_F_q_Set2	1.540	0	0.000	497.267	19.064	0.000	3
M_0.1_F_p_Set1	1.635	0	0.143	503.419	25.217	0.000	14
M_0.1_F_p_Set2	1.467	0	0.000	514.527	36.325	0.000	3
M_0.1_F_t_Set1	1.694	0	1.000	NA	NA	NA	109
M_0.1_F_t_Set2	1.595	0	0.857	NA	NA	NA	65
M_0.1_F_h_Set1	1.719	0	0.429	NA	NA	NA	136
M_0.1_F_h_Set2	1.786	0	0.000	NA	NA	NA	73
M_0.1_F_lq_Set1	1.703	0	0.000	511.421	33.219	0.000	14
M_0.1_F_lq_Set2	1.737	0	0.000	478.630	0.428	0.001	5
M_0.1_F_lp_Set1	1.637	0	0.143	564.529	86.326	0.000	19
M_0.1_F_lp_Set2	1.633	0	0.000	499.572	21.369	0.000	6
M_0.1_F_lt_Set1	1.707	0	1.000	NA	NA	NA	109
M_0.1_F_lt_Set2	1.595	0	0.857	NA	NA	NA	65
M_0.1_F_lh_Set1	1.714	0	0.429	NA	NA	NA	131
M_0.1_F_lh_Set2	1.787	0	0.000	NA	NA	NA	73
M_0.1_F_qp_Set1	1.670	0	0.000	510.768	32.566	0.000	15
M_0.1_F_qp_Set2	1.537	0	0.000	500.634	22.431	0.000	5
M_0.1_F_qt_Set1	1.705	0	1.000	NA	NA	NA	109
M_0.1_F_qt_Set2	1.586	0	0.857	NA	NA	NA	65
M_0.1_F_qh_Set1	1.711	0	0.429	NA	NA	NA	125
M_0.1_F_qh_Set2	1.790	0	0.000	NA	NA	NA	73
M_0.1_F_pt_Set1	1.699	0	1.000	NA	NA	NA	109
M_0.1_F_pt_Set2	1.596	0	0.857	NA	NA	NA	65

M_0.1_F_ph_Set1	1.717	0	0.429	NA	NA	NA	131
M_0.1_F_ph_Set2	1.784	0	0.000	NA	NA	NA	68
M_0.1_F_th_Set1	1.764	0	1.000	NA	NA	NA	122
M_0.1_F_th_Set2	1.625	0	1.000	NA	NA	NA	74
M_0.1_F_lqp_Set1	1.677	0	0.000	520.333	42.130	0.000	16
M_0.1_F_lqp_Set2	1.708	0	0.000	484.640	6.438	0.000	7
M_0.1_F_lqt_Set1	1.712	0	1.000	NA	NA	NA	109
M_0.1_F_lqt_Set2	1.597	0	0.857	NA	NA	NA	65
M_0.1_F_lqh_Set1	1.714	0	0.429	NA	NA	NA	125
M_0.1_F_lqh_Set2	1.788	0	0.000	NA	NA	NA	73
M_0.1_F_lpt_Set1	1.713	0	1.000	NA	NA	NA	109
M_0.1_F_lpt_Set2	1.590	0	0.857	NA	NA	NA	65
M_0.1_F_lph_Set1	1.714	0	0.429	NA	NA	NA	131
M_0.1_F_lph_Set2	1.785	0	0.000	NA	NA	NA	68
M_0.1_F_lth_Set1	1.761	0	1.000	NA	NA	NA	122
M_0.1_F_lth_Set2	1.631	0	1.000	NA	NA	NA	74
M_0.1_F_qpt_Set1	1.709	0	1.000	NA	NA	NA	109
M_0.1_F_qpt_Set2	1.592	0	0.857	NA	NA	NA	65
M_0.1_F_qph_Set1	1.712	0	0.429	NA	NA	NA	140
M_0.1_F_qph_Set2	1.788	0	0.000	NA	NA	NA	67
M_0.1_F_qth_Set1	1.756	0	1.000	NA	NA	NA	122
M_0.1_F_qth_Set2	1.632	0	1.000	NA	NA	NA	74
M_0.1_F_pth_Set1	1.757	0	1.000	NA	NA	NA	122
M_0.1_F_pth_Set2	1.620	0	1.000	NA	NA	NA	74
M_0.1_F_lqpt_Set1	1.702	0	1.000	NA	NA	NA	109
M_0.1_F_lqpt_Set2	1.593	0	0.857	NA	NA	NA	65
M_0.1_F_lqph_Set1	1.716	0	0.429	NA	NA	NA	140
M_0.1_F_lqph_Set2	1.789	0	0.000	NA	NA	NA	67
M_0.1_F_lqth_Set1	1.756	0	1.000	NA	NA	NA	122
M_0.1_F_lqth_Set2	1.627	0	1.000	NA	NA	NA	74
M_0.1_F_lpth_Set1	1.763	0	1.000	NA	NA	NA	122
M_0.1_F_lpth_Set2	1.624	0	1.000	NA	NA	NA	74
M_0.1_F_qpth_Set1	1.765	0	1.000	NA	NA	NA	122
M_0.1_F_qpth_Set2	1.631	0	1.000	NA	NA	NA	74

M_0.1_F_lqpth_Set1	1.756	0	1.000	NA	NA	NA	122
M_0.1_F_lqpth_Set2	1.629	0	1.000	NA	NA	NA	74
M_0.2_F_l_Set1	1.525	0	0.000	505.511	27.308	0.000	6
M_0.2_F_l_Set2	1.523	0	0.000	500.076	21.873	0.000	3
M_0.2_F_q_Set1	1.643	0	0.000	483.557	5.355	0.000	8
M_0.2_F_q_Set2	1.532	0	0.000	497.280	19.077	0.000	3
M_0.2_F_p_Set1	1.638	0	0.000	486.165	7.963	0.000	10
M_0.2_F_p_Set2	1.468	0	0.000	514.935	36.733	0.000	3
M_0.2_F_t_Set1	1.716	0	1.000	NA	NA	NA	90
M_0.2_F_t_Set2	1.700	0	0.857	NA	NA	NA	48
M_0.2_F_h_Set1	1.726	0	0.429	NA	NA	NA	91
M_0.2_F_h_Set2	1.793	0	0.000	2017.629	1539.426	0.000	27
M_0.2_F_lq_Set1	1.703	0	0.000	491.511	13.309	0.000	11
M_0.2_F_lq_Set2	1.728	0	0.000	479.510	1.308	0.001	5
M_0.2_F_lp_Set1	1.642	0	0.000	504.433	26.231	0.000	13
M_0.2_F_lp_Set2	1.614	0	0.000	496.246	18.044	0.000	4
M_0.2_F_lt_Set1	1.707	0	1.000	NA	NA	NA	90
M_0.2_F_lt_Set2	1.691	0	0.857	NA	NA	NA	48
M_0.2_F_lh_Set1	1.728	0	0.429	NA	NA	NA	82
M_0.2_F_lh_Set2	1.791	0	0.000	1205.767	727.565	0.000	26
M_0.2_F_qp_Set1	1.670	0	0.000	491.179	12.976	0.000	11
M_0.2_F_qp_Set2	1.540	0	0.143	498.617	20.415	0.000	4
M_0.2_F_qt_Set1	1.700	0	1.000	NA	NA	NA	90
M_0.2_F_qt_Set2	1.683	0	0.857	NA	NA	NA	49
M_0.2_F_qh_Set1	1.721	0	0.429	NA	NA	NA	94
M_0.2_F_qh_Set2	1.795	0	0.000	2017.629	1539.426	0.000	27
M_0.2_F_pt_Set1	1.707	0	1.000	NA	NA	NA	90
M_0.2_F_pt_Set2	1.692	0	0.857	NA	NA	NA	48
M_0.2_F_ph_Set1	1.719	0	0.429	NA	NA	NA	85
M_0.2_F_ph_Set2	1.792	0	0.000	2017.629	1539.426	0.000	27
M_0.2_F_th_Set1	1.721	0	1.000	NA	NA	NA	101
M_0.2_F_th_Set2	1.681	0	0.857	NA	NA	NA	53
M_0.2_F_lqp_Set1	1.666	0	0.000	518.386	40.183	0.000	15
M_0.2_F_lqp_Set2	1.682	0	0.000	482.652	4.450	0.000	5

M_0.2_F_lqt_Set1	1.693	0	1.000	NA	NA	NA	90
M_0.2_F_lqt_Set2	1.690	0	0.857	NA	NA	NA	49
M_0.2_F_lqh_Set1	1.725	0	0.429	NA	NA	NA	100
M_0.2_F_lqh_Set2	1.794	0	0.000	NA	NA	NA	28
M_0.2_F_lpt_Set1	1.716	0	1.000	NA	NA	NA	90
M_0.2_F_lpt_Set2	1.695	0	0.857	NA	NA	NA	48
M_0.2_F_lph_Set1	1.718	0	0.429	NA	NA	NA	85
M_0.2_F_lph_Set2	1.789	0	0.000	2017.629	1539.426	0.000	27
M_0.2_F_lth_Set1	1.722	0	1.000	NA	NA	NA	101
M_0.2_F_lth_Set2	1.681	0	0.857	NA	NA	NA	53
M_0.2_F_qpt_Set1	1.700	0	1.000	NA	NA	NA	90
M_0.2_F_qpt_Set2	1.691	0	0.857	NA	NA	NA	49
M_0.2_F_qph_Set1	1.724	0	0.429	NA	NA	NA	86
M_0.2_F_qph_Set2	1.791	0	0.000	2017.629	1539.426	0.000	27
M_0.2_F_qth_Set1	1.734	0	1.000	NA	NA	NA	101
M_0.2_F_qth_Set2	1.678	0	0.857	NA	NA	NA	53
M_0.2_F_pth_Set1	1.732	0	1.000	NA	NA	NA	101
M_0.2_F_pth_Set2	1.685	0	0.857	NA	NA	NA	53
M_0.2_F_lqpt_Set1	1.707	0	1.000	NA	NA	NA	90
M_0.2_F_lqpt_Set2	1.681	0	0.857	NA	NA	NA	49
M_0.2_F_lqph_Set1	1.731	0	0.429	NA	NA	NA	86
M_0.2_F_lqph_Set2	1.791	0	0.000	2017.629	1539.426	0.000	27
M_0.2_F_lqth_Set1	1.742	0	1.000	NA	NA	NA	101
M_0.2_F_lqth_Set2	1.686	0	0.857	NA	NA	NA	53
M_0.2_F_lpth_Set1	1.730	0	1.000	NA	NA	NA	101
M_0.2_F_lpth_Set2	1.684	0	0.857	NA	NA	NA	53
M_0.2_F_qpth_Set1	1.732	0	1.000	NA	NA	NA	101
M_0.2_F_qpth_Set2	1.686	0	0.857	NA	NA	NA	53
M_0.2_F_lqpth_Set1	1.732	0	1.000	NA	NA	NA	101
M_0.2_F_lqpth_Set2	1.688	0	0.857	NA	NA	NA	53
M_0.3_F_l_Set1	1.518	0	0.000	502.356	24.154	0.000	5
M_0.3_F_l_Set2	1.523	0	0.000	500.096	21.893	0.000	3
M_0.3_F_q_Set1	1.597	0	0.000	486.130	7.928	0.000	8
M_0.3_F_q_Set2	1.544	0	0.143	497.303	19.101	0.000	3

M_0.3_F_p_Set1	1.587	0	0.000	487.529	9.327	0.000	9
M_0.3_F_p_Set2	1.480	0	0.000	515.593	37.391	0.000	3
M_0.3_F_t_Set1	1.746	0	0.714	NA	NA	NA	77
M_0.3_F_t_Set2	1.706	0	0.143	NA	NA	NA	31
M_0.3_F_h_Set1	1.766	0	0.143	NA	NA	NA	67
M_0.3_F_h_Set2	1.796	0	0.000	800.796	322.594	0.000	24
M_0.3_F_lq_Set1	1.687	0	0.000	488.205	10.003	0.000	10
M_0.3_F_lq_Set2	1.705	0	0.000	480.753	2.550	0.000	5
M_0.3_F_lp_Set1	1.614	0	0.000	493.537	15.335	0.000	10
M_0.3_F_lp_Set2	1.557	0	0.000	496.619	18.416	0.000	4
M_0.3_F_lt_Set1	1.744	0	0.857	NA	NA	NA	79
M_0.3_F_lt_Set2	1.708	0	0.143	NA	NA	NA	34
M_0.3_F_lh_Set1	1.767	0	0.143	NA	NA	NA	72
M_0.3_F_lh_Set2	1.795	0	0.000	720.071	241.868	0.000	23
M_0.3_F_qp_Set1	1.648	0	0.000	482.043	3.841	0.000	8
M_0.3_F_qp_Set2	1.537	0	0.143	499.078	20.876	0.000	4
M_0.3_F_qt_Set1	1.725	0	0.857	NA	NA	NA	78
M_0.3_F_qt_Set2	1.691	0	0.571	NA	NA	NA	33
M_0.3_F_qh_Set1	1.767	0	0.000	NA	NA	NA	71
M_0.3_F_qh_Set2	1.793	0	0.000	665.871	187.669	0.000	22
M_0.3_F_pt_Set1	1.735	0	0.857	NA	NA	NA	78
M_0.3_F_pt_Set2	1.715	0	0.143	NA	NA	NA	31
M_0.3_F_ph_Set1	1.768	0	0.143	NA	NA	NA	64
M_0.3_F_ph_Set2	1.791	0	0.000	800.796	322.594	0.000	24
M_0.3_F_th_Set1	1.742	0	1.000	NA	NA	NA	85
M_0.3_F_th_Set2	1.708	0	0.571	NA	NA	NA	38
M_0.3_F_lqp_Set1	1.648	0	0.000	496.013	17.810	0.000	11
M_0.3_F_lqp_Set2	1.646	0	0.000	482.020	3.817	0.000	4
M_0.3_F_lqt_Set1	1.718	0	0.857	NA	NA	NA	78
M_0.3_F_lqt_Set2	1.682	0	0.429	NA	NA	NA	33
M_0.3_F_lqh_Set1	1.777	0	0.000	NA	NA	NA	78
M_0.3_F_lqh_Set2	1.794	0	0.000	936.543	458.340	0.000	25
M_0.3_F_lpt_Set1	1.733	0	0.857	NA	NA	NA	78
M_0.3_F_lpt_Set2	1.715	0	0.143	NA	NA	NA	31

M_0.3_F_lph_Set1	1.765	0	0.143	NA	NA	NA	64
M_0.3_F_lph_Set2	1.796	0	0.000	800.796	322.594	0.000	24
M_0.3_F_lth_Set1	1.739	0	1.000	NA	NA	NA	86
M_0.3_F_lth_Set2	1.701	0	0.571	NA	NA	NA	37
M_0.3_F_qpt_Set1	1.727	0	0.857	NA	NA	NA	79
M_0.3_F_qpt_Set2	1.690	0	0.571	NA	NA	NA	32
M_0.3_F_qph_Set1	1.770	0	0.143	NA	NA	NA	72
M_0.3_F_qph_Set2	1.798	0	0.000	800.796	322.594	0.000	24
M_0.3_F_qth_Set1	1.743	0	1.000	NA	NA	NA	86
M_0.3_F_qth_Set2	1.704	0	0.571	NA	NA	NA	40
M_0.3_F_pth_Set1	1.739	0	1.000	NA	NA	NA	85
M_0.3_F_pth_Set2	1.707	0	0.571	NA	NA	NA	38
M_0.3_F_lqpt_Set1	1.727	0	0.857	NA	NA	NA	79
M_0.3_F_lqpt_Set2	1.697	0	0.571	NA	NA	NA	32
M_0.3_F_lqph_Set1	1.769	0	0.143	NA	NA	NA	72
M_0.3_F_lqph_Set2	1.796	0	0.000	800.796	322.594	0.000	24
M_0.3_F_lqth_Set1	1.740	0	1.000	NA	NA	NA	86
M_0.3_F_lqth_Set2	1.706	0	0.571	NA	NA	NA	38
M_0.3_F_lpth_Set1	1.736	0	1.000	NA	NA	NA	85
M_0.3_F_lpth_Set2	1.703	0	0.571	NA	NA	NA	38
M_0.3_F_qpth_Set1	1.745	0	1.000	NA	NA	NA	85
M_0.3_F_qpth_Set2	1.702	0	0.571	NA	NA	NA	38
M_0.3_F_lqpth_Set1	1.743	0	1.000	NA	NA	NA	85
M_0.3_F_lqpth_Set2	1.706	0	0.571	NA	NA	NA	38
M_0.4_F_l_Set1	1.513	0	0.000	502.428	24.226	0.000	5
M_0.4_F_l_Set2	1.529	0	0.000	500.125	21.922	0.000	3
M_0.4_F_q_Set1	1.590	0	0.000	481.278	3.075	0.000	6
M_0.4_F_q_Set2	1.546	0	0.143	497.338	19.135	0.000	3
M_0.4_F_p_Set1	1.556	0	0.000	490.828	12.625	0.000	8
M_0.4_F_p_Set2	1.489	0	0.000	516.477	38.274	0.000	3
M_0.4_F_t_Set1	1.787	0	0.143	NA	NA	NA	49
M_0.4_F_t_Set2	1.706	0	0.143	907.511	429.308	0.000	25
M_0.4_F_h_Set1	1.804	0	0.000	NA	NA	NA	76
M_0.4_F_h_Set2	1.795	0	0.000	720.703	242.501	0.000	23

M_0.4_F_lq_Set1	1.661	0	0.000	486.983	8.781	0.000	9
M_0.4_F_lq_Set2	1.678	0	0.000	482.196	3.993	0.000	5
M_0.4_F_lp_Set1	1.559	0	0.000	495.503	17.301	0.000	9
M_0.4_F_lp_Set2	1.571	0	0.000	504.404	26.202	0.000	6
M_0.4_F_lt_Set1	1.756	0	0.143	NA	NA	NA	50
M_0.4_F_lt_Set2	1.694	0	0.143	694.133	215.931	0.000	23
M_0.4_F_lh_Set1	1.801	0	0.000	NA	NA	NA	58
M_0.4_F_lh_Set2	1.798	0	0.000	599.565	121.363	0.000	20
M_0.4_F_qp_Set1	1.610	0	0.000	486.436	8.233	0.000	8
M_0.4_F_qp_Set2	1.536	0	0.143	499.622	21.419	0.000	4
M_0.4_F_qt_Set1	1.727	0	0.143	NA	NA	NA	46
M_0.4_F_qt_Set2	1.679	0	0.143	693.057	214.854	0.000	23
M_0.4_F_qh_Set1	1.798	0	0.000	NA	NA	NA	55
M_0.4_F_qh_Set2	1.794	0	0.000	558.790	80.587	0.000	18
M_0.4_F_pt_Set1	1.735	0	0.143	NA	NA	NA	49
M_0.4_F_pt_Set2	1.693	0	0.143	907.511	429.308	0.000	25
M_0.4_F_ph_Set1	1.799	0	0.000	NA	NA	NA	77
M_0.4_F_ph_Set2	1.796	0	0.000	720.703	242.501	0.000	23
M_0.4_F_th_Set1	1.754	0	0.429	NA	NA	NA	58
M_0.4_F_th_Set2	1.705	0	0.143	907.814	429.612	0.000	25
M_0.4_F_lqp_Set1	1.614	0	0.000	495.704	17.502	0.000	10
M_0.4_F_lqp_Set2	1.616	0	0.000	484.386	6.183	0.000	4
M_0.4_F_lqt_Set1	1.733	0	0.143	NA	NA	NA	49
M_0.4_F_lqt_Set2	1.672	0	0.143	638.494	160.292	0.000	22
M_0.4_F_lqh_Set1	1.793	0	0.000	NA	NA	NA	64
M_0.4_F_lqh_Set2	1.794	0	0.000	599.509	121.307	0.000	20
M_0.4_F_lpt_Set1	1.733	0	0.143	NA	NA	NA	49
M_0.4_F_lpt_Set2	1.705	0	0.143	774.701	296.498	0.000	24
M_0.4_F_lph_Set1	1.800	0	0.000	NA	NA	NA	77
M_0.4_F_lph_Set2	1.796	0	0.000	720.703	242.501	0.000	23
M_0.4_F_lth_Set1	1.753	0	0.429	NA	NA	NA	53
M_0.4_F_lth_Set2	1.693	0	0.143	692.280	214.077	0.000	23
M_0.4_F_qpt_Set1	1.725	0	0.143	NA	NA	NA	49
M_0.4_F_qpt_Set2	1.685	0	0.143	1179.798	701.596	0.000	26

M_0.4_F_qph_Set1	1.803	0	0.000	NA	NA	NA	64
M_0.4_F_qph_Set2	1.798	0	0.000	720.703	242.501	0.000	23
M_0.4_F_qth_Set1	1.752	0	0.143	NA	NA	NA	54
M_0.4_F_qth_Set2	1.692	0	0.143	909.128	430.925	0.000	25
M_0.4_F_pth_Set1	1.760	0	0.429	NA	NA	NA	59
M_0.4_F_pth_Set2	1.694	0	0.143	907.814	429.612	0.000	25
M_0.4_F_lqpt_Set1	1.729	0	0.143	NA	NA	NA	49
M_0.4_F_lqpt_Set2	1.680	0	0.143	774.006	295.803	0.000	24
M_0.4_F_lqph_Set1	1.799	0	0.000	NA	NA	NA	64
M_0.4_F_lqph_Set2	1.796	0	0.000	720.703	242.501	0.000	23
M_0.4_F_lqth_Set1	1.759	0	0.143	NA	NA	NA	54
M_0.4_F_lqth_Set2	1.702	0	0.143	692.222	214.019	0.000	23
M_0.4_F_lpth_Set1	1.757	0	0.429	NA	NA	NA	59
M_0.4_F_lpth_Set2	1.696	0	0.143	907.814	429.612	0.000	25
M_0.4_F_qpth_Set1	1.760	0	0.429	NA	NA	NA	57
M_0.4_F_qpth_Set2	1.693	0	0.143	907.814	429.612	0.000	25
M_0.4_F_lqpth_Set1	1.757	0	0.429	NA	NA	NA	57
M_0.4_F_lqpth_Set2	1.695	0	0.143	907.814	429.612	0.000	25
M_0.5_F_l_Set1	1.507	0	0.000	499.562	21.360	0.000	4
M_0.5_F_l_Set2	1.525	0	0.000	500.163	21.960	0.000	3
M_0.5_F_q_Set1	1.578	0	0.000	484.180	5.977	0.000	6
M_0.5_F_q_Set2	1.540	0	0.143	497.382	19.180	0.000	3
M_0.5_F_p_Set1	1.532	0	0.000	494.223	16.020	0.000	7
M_0.5_F_p_Set2	1.489	0	0.000	517.561	39.359	0.000	3
M_0.5_F_t_Set1	1.801	0	0.000	NA	NA	NA	34
M_0.5_F_t_Set2	1.721	0	0.000	609.078	130.876	0.000	21
M_0.5_F_h_Set1	1.805	0	0.000	NA	NA	NA	49
M_0.5_F_h_Set2	1.790	0	0.000	667.846	189.644	0.000	22
M_0.5_F_lq_Set1	1.645	0	0.000	481.040	2.838	0.000	7
M_0.5_F_lq_Set2	1.654	0	0.000	480.532	2.329	0.000	4
M_0.5_F_lp_Set1	1.561	0	0.000	501.647	23.444	0.000	9
M_0.5_F_lp_Set2	1.564	0	0.000	501.276	23.074	0.000	4
M_0.5_F_lt_Set1	1.772	0	0.143	NA	NA	NA	36
M_0.5_F_lt_Set2	1.692	0	0.000	542.229	64.026	0.000	18

M_0.5_F_lh_Set1	1.807	0	0.000	NA	NA	NA	46
M_0.5_F_lh_Set2	1.785	0	0.000	629.451	151.248	0.000	21
M_0.5_F_qp_Set1	1.581	0	0.000	482.059	3.857	0.000	6
M_0.5_F_qp_Set2	1.534	0	0.143	500.224	22.022	0.000	4
M_0.5_F_qt_Set1	1.750	0	0.143	NA	NA	NA	36
M_0.5_F_qt_Set2	1.677	0	0.143	580.721	102.518	0.000	20
M_0.5_F_qh_Set1	1.800	0	0.000	NA	NA	NA	48
M_0.5_F_qh_Set2	1.796	0	0.000	600.273	122.070	0.000	20
M_0.5_F_pt_Set1	1.768	0	0.000	NA	NA	NA	35
M_0.5_F_pt_Set2	1.716	0	0.000	609.913	131.711	0.000	21
M_0.5_F_ph_Set1	1.804	0	0.000	NA	NA	NA	48
M_0.5_F_ph_Set2	1.787	0	0.000	667.846	189.644	0.000	22
M_0.5_F_th_Set1	1.780	0	0.000	NA	NA	NA	47
M_0.5_F_th_Set2	1.711	0	0.000	612.066	133.863	0.000	21
M_0.5_F_lqp_Set1	1.584	0	0.000	482.145	3.943	0.000	6
M_0.5_F_lqp_Set2	1.587	0	0.000	486.830	8.627	0.000	4
M_0.5_F_lqt_Set1	1.745	0	0.143	NA	NA	NA	37
M_0.5_F_lqt_Set2	1.666	0	0.143	580.623	102.420	0.000	20
M_0.5_F_lqh_Set1	1.799	0	0.000	NA	NA	NA	50
M_0.5_F_lqh_Set2	1.788	0	0.000	600.394	122.191	0.000	20
M_0.5_F_lpt_Set1	1.773	0	0.000	NA	NA	NA	35
M_0.5_F_lpt_Set2	1.702	0	0.000	505.312	27.110	0.000	15
M_0.5_F_lph_Set1	1.806	0	0.000	NA	NA	NA	43
M_0.5_F_lph_Set2	1.788	0	0.000	667.846	189.644	0.000	22
M_0.5_F_lth_Set1	1.774	0	0.000	NA	NA	NA	43
M_0.5_F_lth_Set2	1.706	0	0.000	560.409	82.207	0.000	19
M_0.5_F_qpt_Set1	1.753	0	0.143	NA	NA	NA	34
M_0.5_F_qpt_Set2	1.694	0	0.143	540.975	62.772	0.000	18
M_0.5_F_qph_Set1	1.805	0	0.000	NA	NA	NA	38
M_0.5_F_qph_Set2	1.785	0	0.000	667.846	189.644	0.000	22
M_0.5_F_qth_Set1	1.774	0	0.000	NA	NA	NA	42
M_0.5_F_qth_Set2	1.708	0	0.000	612.221	134.019	0.000	21
M_0.5_F_pth_Set1	1.772	0	0.000	NA	NA	NA	49
M_0.5_F_pth_Set2	1.714	0	0.000	612.066	133.863	0.000	21

M_0.5_F_lqpt_Set1	1.752	0	0.143	NA	NA	NA	34
M_0.5_F_lqpt_Set2	1.684	0	0.143	541.107	62.904	0.000	18
M_0.5_F_lqph_Set1	1.808	0	0.000	NA	NA	NA	45
M_0.5_F_lqph_Set2	1.784	0	0.000	667.846	189.644	0.000	22
M_0.5_F_lqth_Set1	1.775	0	0.000	NA	NA	NA	45
M_0.5_F_lqth_Set2	1.704	0	0.000	560.444	82.242	0.000	19
M_0.5_F_lpth_Set1	1.776	0	0.000	NA	NA	NA	49
M_0.5_F_lpth_Set2	1.718	0	0.000	612.066	133.863	0.000	21
M_0.5_F_qpth_Set1	1.777	0	0.000	NA	NA	NA	46
M_0.5_F_qpth_Set2	1.716	0	0.000	612.066	133.863	0.000	21
M_0.5_F_lqpth_Set1	1.768	0	0.000	NA	NA	NA	46
M_0.5_F_lqpth_Set2	1.720	0	0.000	612.066	133.863	0.000	21
M_0.6_F_l_Set1	1.510	0	0.000	499.615	21.412	0.000	4
M_0.6_F_l_Set2	1.525	0	0.000	500.209	22.006	0.000	3
M_0.6_F_q_Set1	1.569	0	0.000	487.317	9.114	0.000	6
M_0.6_F_q_Set2	1.537	0	0.143	497.438	19.235	0.000	3
M_0.6_F_p_Set1	1.533	0	0.000	506.005	27.803	0.000	8
M_0.6_F_p_Set2	1.493	0	0.143	518.823	40.621	0.000	3
M_0.6_F_t_Set1	1.796	0	0.000	901.177	422.975	0.000	25
M_0.6_F_t_Set2	1.718	0	0.000	520.523	42.321	0.000	16
M_0.6_F_h_Set1	1.772	0	0.000	NA	NA	NA	45
M_0.6_F_h_Set2	1.775	0	0.000	533.419	55.216	0.000	16
M_0.6_F_lq_Set1	1.630	0	0.000	482.395	4.193	0.000	7
M_0.6_F_lq_Set2	1.642	0	0.000	481.563	3.361	0.000	4
M_0.6_F_lp_Set1	1.554	0	0.000	502.170	23.967	0.000	8
M_0.6_F_lp_Set2	1.561	0	0.000	499.209	21.007	0.000	3
M_0.6_F_lt_Set1	1.774	0	0.000	NA	NA	NA	30
M_0.6_F_lt_Set2	1.692	0	0.000	512.345	34.143	0.000	15
M_0.6_F_lh_Set1	1.763	0	0.000	NA	NA	NA	39
M_0.6_F_lh_Set2	1.782	0	0.000	545.991	67.788	0.000	17
M_0.6_F_qp_Set1	1.567	0	0.000	484.518	6.315	0.000	6
M_0.6_F_qp_Set2	1.515	0	0.143	498.094	19.892	0.000	3
M_0.6_F_qt_Set1	1.737	0	0.143	NA	NA	NA	31
M_0.6_F_qt_Set2	1.687	0	0.143	521.117	42.915	0.000	16

M_0.6_F_qh_Set1	1.782	0	0.000	NA	NA	NA	35
M_0.6_F_qh_Set2	1.785	0	0.000	601.036	122.834	0.000	20
M_0.6_F_pt_Set1	1.770	0	0.000	1980.159	1501.957	0.000	27
M_0.6_F_pt_Set2	1.717	0	0.000	512.080	33.878	0.000	15
M_0.6_F_ph_Set1	1.770	0	0.000	NA	NA	NA	57
M_0.6_F_ph_Set2	1.776	0	0.000	533.419	55.216	0.000	16
M_0.6_F_th_Set1	1.771	0	0.000	NA	NA	NA	34
M_0.6_F_th_Set2	1.722	0	0.000	523.282	45.080	0.000	16
M_0.6_F_lqp_Set1	1.564	0	0.000	484.709	6.507	0.000	6
M_0.6_F_lqp_Set2	1.577	0	0.000	489.295	11.093	0.000	4
M_0.6_F_lqt_Set1	1.725	0	0.143	NA	NA	NA	32
M_0.6_F_lqt_Set2	1.677	0	0.143	533.062	54.860	0.000	17
M_0.6_F_lqh_Set1	1.783	0	0.000	NA	NA	NA	39
M_0.6_F_lqh_Set2	1.783	0	0.000	578.597	100.395	0.000	19
M_0.6_F_lpt_Set1	1.775	0	0.000	1980.159	1501.957	0.000	27
M_0.6_F_lpt_Set2	1.708	0	0.000	495.801	17.599	0.000	13
M_0.6_F_lph_Set1	1.766	0	0.000	NA	NA	NA	54
M_0.6_F_lph_Set2	1.779	0	0.000	533.419	55.216	0.000	16
M_0.6_F_lth_Set1	1.778	0	0.000	NA	NA	NA	36
M_0.6_F_lth_Set2	1.713	0	0.000	535.640	57.438	0.000	17
M_0.6_F_qpt_Set1	1.749	0	0.000	NA	NA	NA	28
M_0.6_F_qpt_Set2	1.690	0	0.000	511.277	33.074	0.000	15
M_0.6_F_qph_Set1	1.765	0	0.000	NA	NA	NA	53
M_0.6_F_qph_Set2	1.777	0	0.000	533.419	55.216	0.000	16
M_0.6_F_qth_Set1	1.787	0	0.000	NA	NA	NA	35
M_0.6_F_qth_Set2	1.719	0	0.000	523.655	45.452	0.000	16
M_0.6_F_pth_Set1	1.768	0	0.000	NA	NA	NA	38
M_0.6_F_pth_Set2	1.716	0	0.000	523.282	45.080	0.000	16
M_0.6_F_lqpt_Set1	1.752	0	0.000	NA	NA	NA	28
M_0.6_F_lqpt_Set2	1.695	0	0.000	511.360	33.158	0.000	15
M_0.6_F_lqph_Set1	1.767	0	0.000	NA	NA	NA	58
M_0.6_F_lqph_Set2	1.778	0	0.000	533.419	55.216	0.000	16
M_0.6_F_lqth_Set1	1.782	0	0.000	NA	NA	NA	35
M_0.6_F_lqth_Set2	1.716	0	0.000	535.553	57.351	0.000	17

M_0.6_F_lpth_Set1	1.772	0	0.000	NA	NA	NA	38
M_0.6_F_lpth_Set2	1.716	0	0.000	523.282	45.080	0.000	16
M_0.6_F_qpth_Set1	1.767	0	0.000	NA	NA	NA	35
M_0.6_F_qpth_Set2	1.714	0	0.000	523.282	45.080	0.000	16
M_0.6_F_lqpth_Set1	1.773	0	0.000	NA	NA	NA	35
M_0.6_F_lqpth_Set2	1.721	0	0.000	523.282	45.080	0.000	16
M_0.7_F_l_Set1	1.510	0	0.000	499.677	21.475	0.000	4
M_0.7_F_l_Set2	1.522	0	0.000	500.264	22.061	0.000	3
M_0.7_F_q_Set1	1.552	0	0.000	488.787	10.585	0.000	6
M_0.7_F_q_Set2	1.534	0	0.143	497.504	19.301	0.000	3
M_0.7_F_p_Set1	1.520	0	0.000	497.263	19.060	0.000	5
M_0.7_F_p_Set2	1.477	0	0.143	520.241	42.039	0.000	3
M_0.7_F_t_Set1	1.788	0	0.000	693.283	215.080	0.000	23
M_0.7_F_t_Set2	1.710	0	0.000	505.057	26.855	0.000	14
M_0.7_F_h_Set1	1.746	0	0.000	NA	NA	NA	28
M_0.7_F_h_Set2	1.763	0	0.000	546.496	68.294	0.000	17
M_0.7_F_lq_Set1	1.606	0	0.000	483.793	5.591	0.000	7
M_0.7_F_lq_Set2	1.611	0	0.000	482.638	4.436	0.000	4
M_0.7_F_lp_Set1	1.558	0	0.000	506.726	28.524	0.000	8
M_0.7_F_lp_Set2	1.575	0	0.000	499.484	21.282	0.000	3
M_0.7_F_lt_Set1	1.765	0	0.000	775.804	297.601	0.000	24
M_0.7_F_lt_Set2	1.694	0	0.000	487.119	8.917	0.000	11
M_0.7_F_lh_Set1	1.746	0	0.000	789.936	311.733	0.000	24
M_0.7_F_lh_Set2	1.774	0	0.000	546.958	68.755	0.000	17
M_0.7_F_qp_Set1	1.567	0	0.000	487.276	9.074	0.000	6
M_0.7_F_qp_Set2	1.520	0	0.143	498.396	20.194	0.000	3
M_0.7_F_qt_Set1	1.724	0	0.143	909.833	431.631	0.000	25
M_0.7_F_qt_Set2	1.685	0	0.143	497.803	19.601	0.000	13
M_0.7_F_qh_Set1	1.757	0	0.000	707.267	229.064	0.000	23
M_0.7_F_qh_Set2	1.779	0	0.000	561.316	83.114	0.000	18
M_0.7_F_pt_Set1	1.766	0	0.000	908.080	429.878	0.000	25
M_0.7_F_pt_Set2	1.709	0	0.000	493.159	14.957	0.000	12
M_0.7_F_ph_Set1	1.750	0	0.000	NA	NA	NA	36
M_0.7_F_ph_Set2	1.765	0	0.000	546.496	68.294	0.000	17

M_0.7_F_th_Set1	1.751	0	0.000	NA	NA	NA	28
M_0.7_F_th_Set2	1.717	0	0.000	539.119	60.917	0.000	17
M_0.7_F_lqp_Set1	1.568	0	0.000	490.675	12.473	0.000	7
M_0.7_F_lqp_Set2	1.583	0	0.000	491.750	13.548	0.000	4
M_0.7_F_lqt_Set1	1.726	0	0.143	1179.900	701.698	0.000	26
M_0.7_F_lqt_Set2	1.676	0	0.143	506.104	27.901	0.000	14
M_0.7_F_lqh_Set1	1.758	0	0.000	NA	NA	NA	30
M_0.7_F_lqh_Set2	1.772	0	0.000	561.497	83.294	0.000	18
M_0.7_F_lpt_Set1	1.766	0	0.000	1178.994	700.792	0.000	26
M_0.7_F_lpt_Set2	1.699	0	0.000	486.277	8.075	0.000	11
M_0.7_F_lph_Set1	1.750	0	0.000	NA	NA	NA	36
M_0.7_F_lph_Set2	1.768	0	0.000	546.496	68.294	0.000	17
M_0.7_F_lth_Set1	1.757	0	0.000	NA	NA	NA	30
M_0.7_F_lth_Set2	1.713	0	0.000	516.767	38.565	0.000	15
M_0.7_F_qpt_Set1	1.753	0	0.000	1177.884	699.682	0.000	26
M_0.7_F_qpt_Set2	1.696	0	0.000	505.681	27.479	0.000	14
M_0.7_F_qph_Set1	1.750	0	0.000	NA	NA	NA	38
M_0.7_F_qph_Set2	1.767	0	0.000	546.496	68.294	0.000	17
M_0.7_F_qth_Set1	1.769	0	0.000	NA	NA	NA	28
M_0.7_F_qth_Set2	1.718	0	0.000	507.436	29.233	0.000	14
M_0.7_F_pth_Set1	1.752	0	0.000	NA	NA	NA	33
M_0.7_F_pth_Set2	1.716	0	0.000	539.119	60.917	0.000	17
M_0.7_F_lqpt_Set1	1.750	0	0.000	907.497	429.294	0.000	25
M_0.7_F_lqpt_Set2	1.680	0	0.000	498.370	20.168	0.000	13
M_0.7_F_lqph_Set1	1.750	0	0.000	NA	NA	NA	42
M_0.7_F_lqph_Set2	1.764	0	0.000	546.496	68.294	0.000	17
M_0.7_F_lqth_Set1	1.774	0	0.000	NA	NA	NA	29
M_0.7_F_lqth_Set2	1.707	0	0.000	527.247	49.044	0.000	16
M_0.7_F_lpth_Set1	1.755	0	0.000	NA	NA	NA	33
M_0.7_F_lpth_Set2	1.714	0	0.000	539.119	60.917	0.000	17
M_0.7_F_qpth_Set1	1.746	0	0.000	NA	NA	NA	32
M_0.7_F_qpth_Set2	1.721	0	0.000	539.119	60.917	0.000	17
M_0.7_F_lqpth_Set1	1.756	0	0.000	NA	NA	NA	32
M_0.7_F_lqpth_Set2	1.716	0	0.000	539.119	60.917	0.000	17

M_0.8_F_l_Set1	1.523	0	0.000	499.749	21.546	0.000	4
M_0.8_F_l_Set2	1.522	0	0.000	500.327	22.125	0.000	3
M_0.8_F_q_Set1	1.550	0	0.000	489.936	11.733	0.000	6
M_0.8_F_q_Set2	1.532	0	0.143	497.580	19.377	0.000	3
M_0.8_F_p_Set1	1.525	0	0.000	501.585	23.383	0.000	6
M_0.8_F_p_Set2	1.480	0	0.143	521.795	43.592	0.000	3
M_0.8_F_t_Set1	1.784	0	0.000	606.899	128.697	0.000	21
M_0.8_F_t_Set2	1.694	0	0.000	509.491	31.288	0.000	14
M_0.8_F_h_Set1	1.740	0	0.000	NA	NA	NA	33
M_0.8_F_h_Set2	1.752	0	0.000	534.982	56.779	0.000	16
M_0.8_F_lq_Set1	1.587	0	0.000	489.173	10.971	0.000	8
M_0.8_F_lq_Set2	1.605	0	0.000	483.744	5.542	0.000	4
M_0.8_F_lp_Set1	1.554	0	0.000	503.858	25.655	0.000	7
M_0.8_F_lp_Set2	1.554	0	0.000	499.805	21.602	0.000	3
M_0.8_F_lt_Set1	1.759	0	0.000	608.461	130.258	0.000	21
M_0.8_F_lt_Set2	1.685	0	0.000	490.099	11.896	0.000	11
M_0.8_F_lh_Set1	1.743	0	0.000	549.008	70.806	0.000	18
M_0.8_F_lh_Set2	1.759	0	0.000	516.284	38.082	0.000	14
M_0.8_F_qp_Set1	1.564	0	0.000	489.936	11.734	0.000	6
M_0.8_F_qp_Set2	1.515	0	0.143	498.744	20.542	0.000	3
M_0.8_F_qt_Set1	1.717	0	0.000	645.764	167.561	0.000	22
M_0.8_F_qt_Set2	1.684	0	0.000	500.986	22.784	0.000	13
M_0.8_F_qh_Set1	1.750	0	0.000	926.876	448.674	0.000	25
M_0.8_F_qh_Set2	1.760	0	0.000	535.193	56.991	0.000	16
M_0.8_F_pt_Set1	1.760	0	0.000	646.168	167.965	0.000	22
M_0.8_F_pt_Set2	1.721	0	0.000	490.134	11.931	0.000	11
M_0.8_F_ph_Set1	1.733	0	0.000	NA	NA	NA	34
M_0.8_F_ph_Set2	1.759	0	0.000	534.982	56.779	0.000	16
M_0.8_F_th_Set1	1.744	0	0.000	1999.359	1521.156	0.000	27
M_0.8_F_th_Set2	1.717	0	0.000	540.898	62.696	0.000	17
M_0.8_F_lqp_Set1	1.570	0	0.000	489.930	11.727	0.000	6
M_0.8_F_lqp_Set2	1.582	0	0.000	494.179	15.976	0.000	4
M_0.8_F_lqt_Set1	1.708	0	0.000	699.313	221.111	0.000	23
M_0.8_F_lqt_Set2	1.673	0	0.143	509.423	31.221	0.000	14

M_0.8_F_lqh_Set1	1.737	0	0.000	656.304	178.102	0.000	22
M_0.8_F_lqh_Set2	1.764	0	0.000	580.485	102.283	0.000	19
M_0.8_F_lpt_Set1	1.761	0	0.000	579.422	101.220	0.000	20
M_0.8_F_lpt_Set2	1.702	0	0.000	484.034	5.832	0.000	10
M_0.8_F_lph_Set1	1.735	0	0.000	NA	NA	NA	34
M_0.8_F_lph_Set2	1.756	0	0.000	534.982	56.779	0.000	16
M_0.8_F_lth_Set1	1.744	0	0.000	700.445	222.242	0.000	23
M_0.8_F_lth_Set2	1.717	0	0.000	509.567	31.364	0.000	14
M_0.8_F_qpt_Set1	1.745	0	0.000	781.502	303.299	0.000	24
M_0.8_F_qpt_Set2	1.685	0	0.000	494.486	16.284	0.000	12
M_0.8_F_qph_Set1	1.738	0	0.000	NA	NA	NA	40
M_0.8_F_qph_Set2	1.753	0	0.000	534.982	56.779	0.000	16
M_0.8_F_qth_Set1	1.755	0	0.000	1998.566	1520.363	0.000	27
M_0.8_F_qth_Set2	1.714	0	0.000	528.533	50.330	0.000	16
M_0.8_F_pth_Set1	1.744	0	0.000	1999.287	1521.085	0.000	27
M_0.8_F_pth_Set2	1.720	0	0.000	540.898	62.696	0.000	17
M_0.8_F_lqpt_Set1	1.741	0	0.000	781.534	303.332	0.000	24
M_0.8_F_lqpt_Set2	1.678	0	0.000	489.008	10.805	0.000	11
M_0.8_F_lqph_Set1	1.736	0	0.000	NA	NA	NA	41
M_0.8_F_lqph_Set2	1.756	0	0.000	534.982	56.779	0.000	16
M_0.8_F_lqth_Set1	1.748	0	0.000	NA	NA	NA	28
M_0.8_F_lqth_Set2	1.711	0	0.000	518.532	40.330	0.000	15
M_0.8_F_lpth_Set1	1.737	0	0.000	1999.287	1521.085	0.000	27
M_0.8_F_lpth_Set2	1.722	0	0.000	540.898	62.696	0.000	17
M_0.8_F_qpth_Set1	1.745	0	0.000	1999.287	1521.085	0.000	27
M_0.8_F_qpth_Set2	1.716	0	0.000	540.898	62.696	0.000	17
M_0.8_F_lqpth_Set1	1.744	0	0.000	1999.287	1521.085	0.000	27
M_0.8_F_lqpth_Set2	1.718	0	0.000	540.898	62.696	0.000	17
M_0.9_F_l_Set1	1.514	0	0.000	499.830	21.628	0.000	4
M_0.9_F_l_Set2	1.527	0	0.000	500.399	22.197	0.000	3
M_0.9_F_q_Set1	1.549	0	0.000	491.162	12.959	0.000	6
M_0.9_F_q_Set2	1.530	0	0.143	497.666	19.463	0.000	3