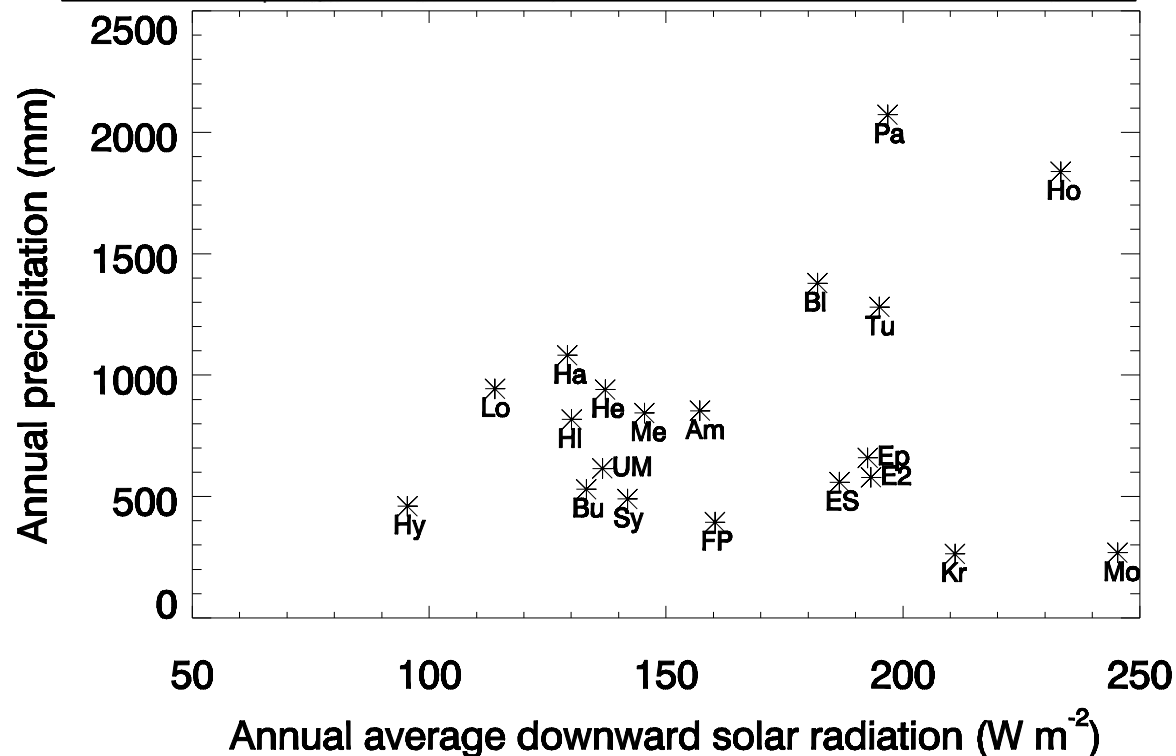
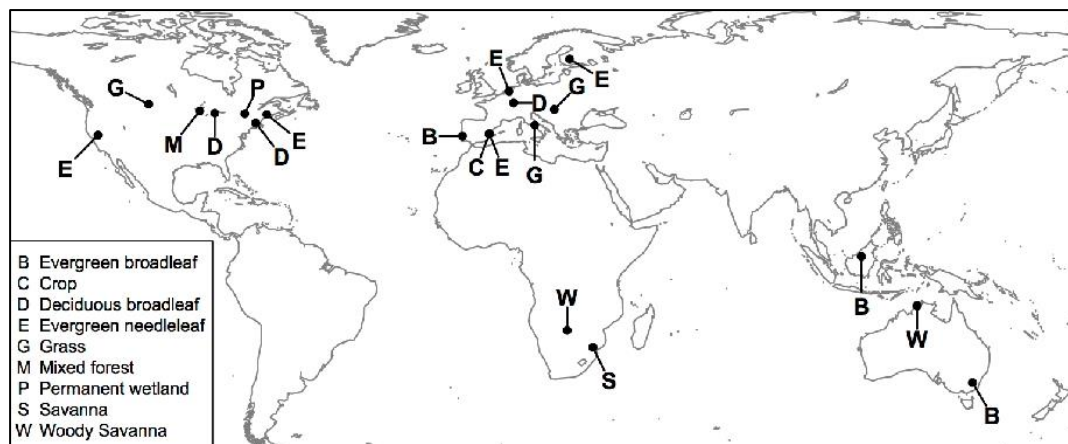


PLUMBER: PALS Land sUrface Model Benchmarking Evaluation pRoject

M.J. Best, G. Abramowitz, A. Pitman

2nd ILAMB workshop, Washington DC, 16th – 18th May 2016

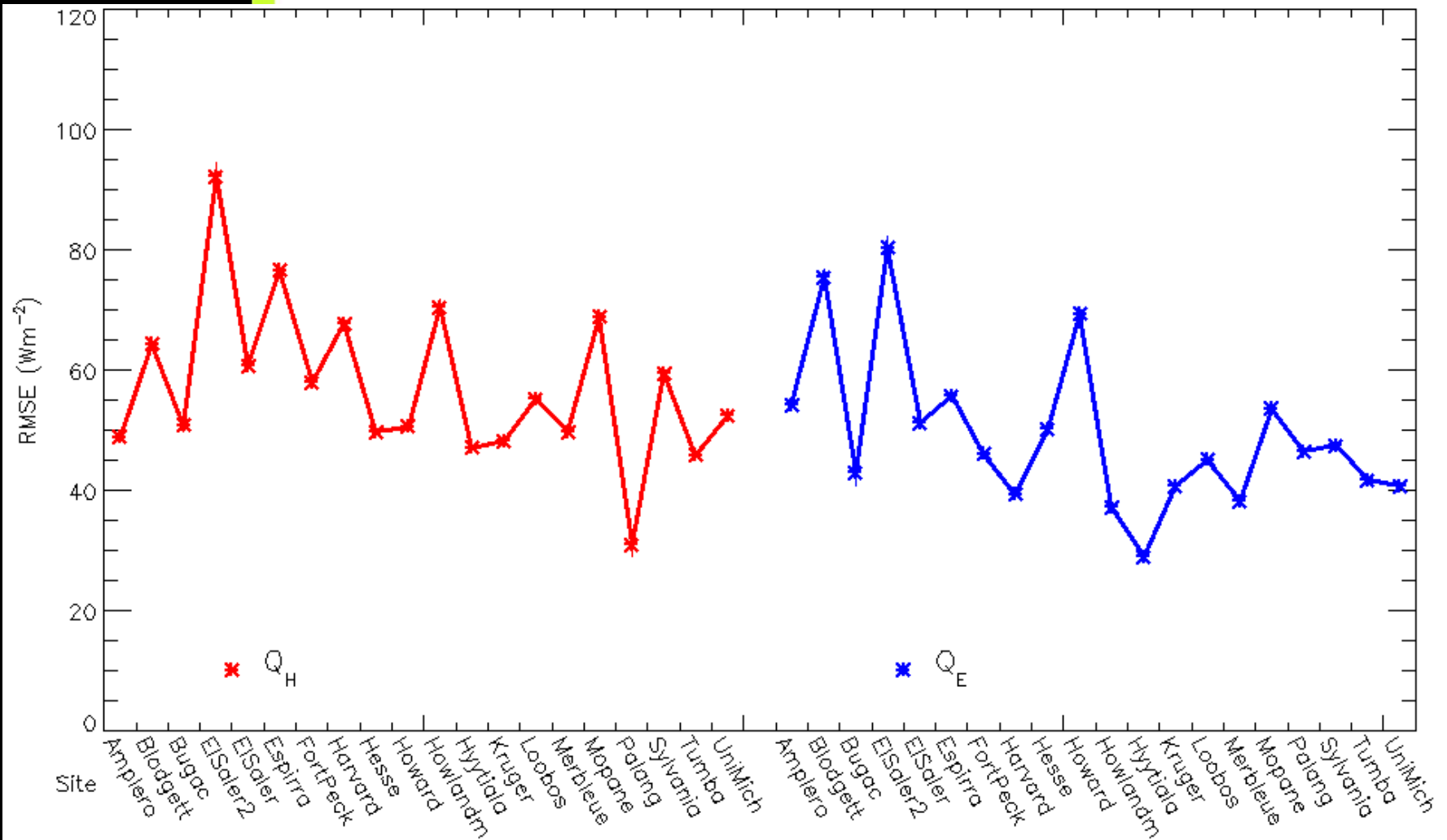
Observational sites



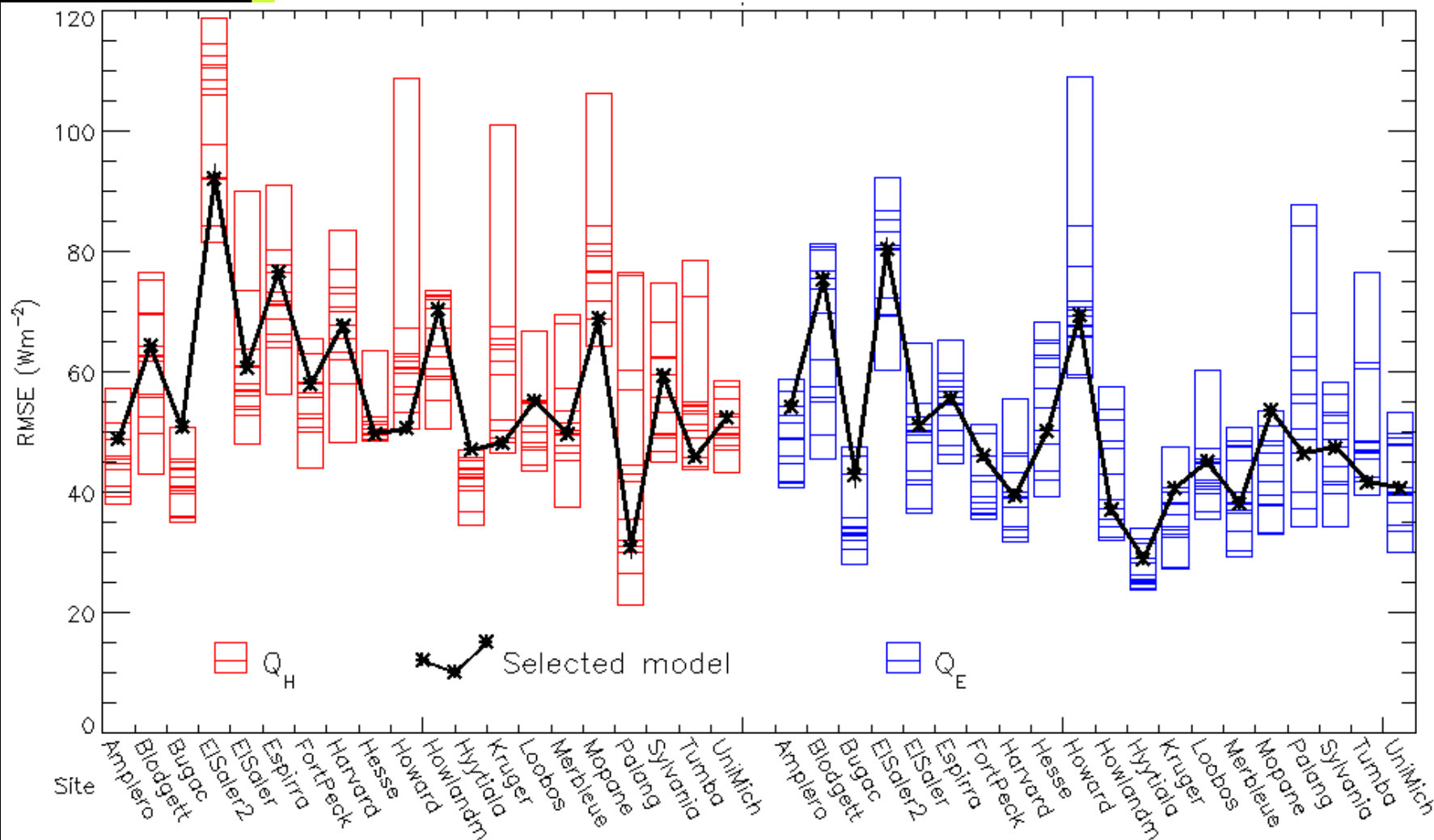
Evaluation Comparison Benchmarking



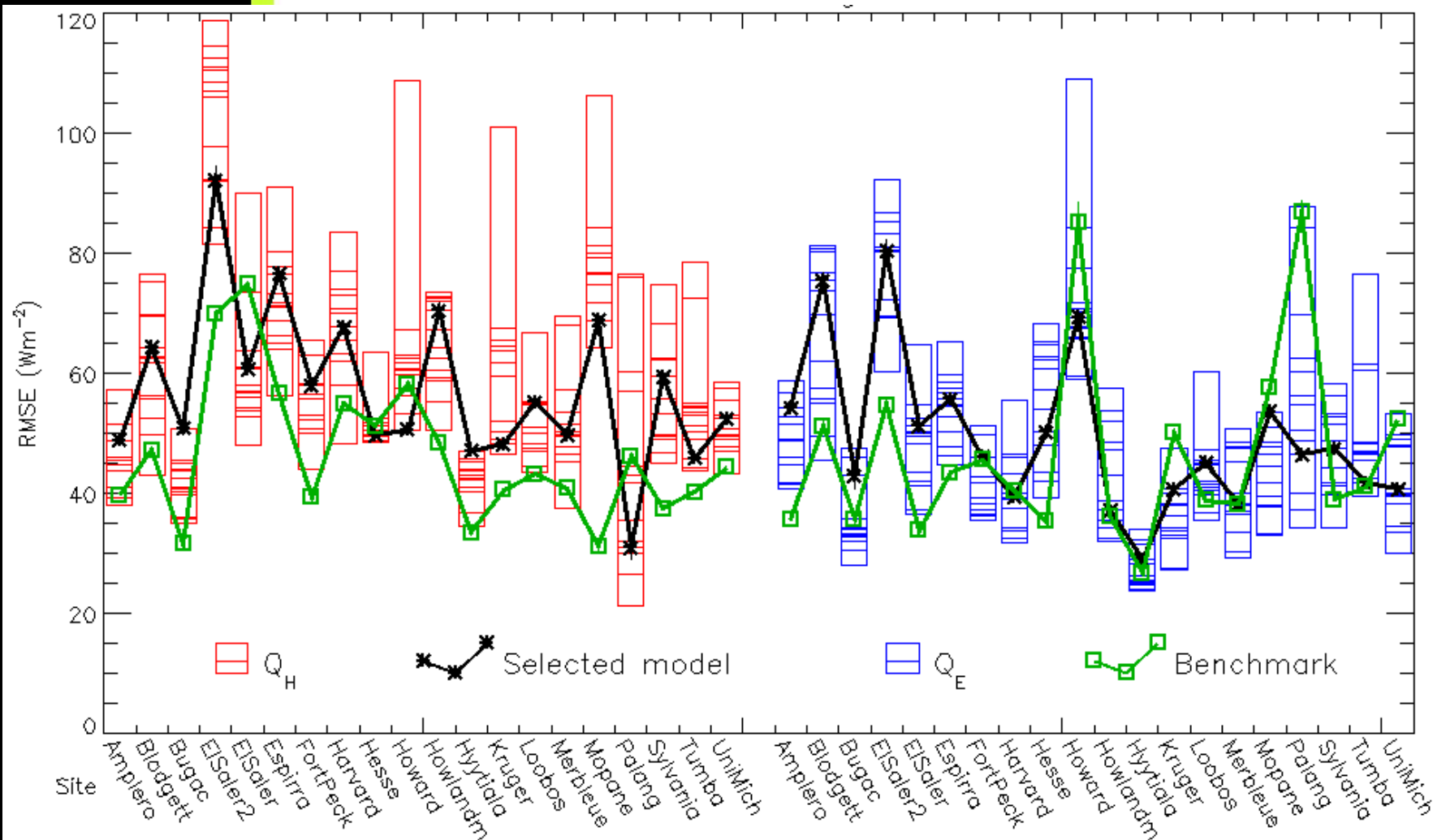
Multi-site evaluation for Q_H and Q_E



Multi-site comparison for Q_H and Q_E



Multi-site benchmarking of Q_H and Q_E against a linear regression!





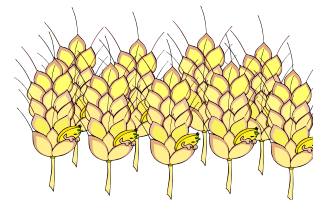
Met Office

Results from PLUMBER

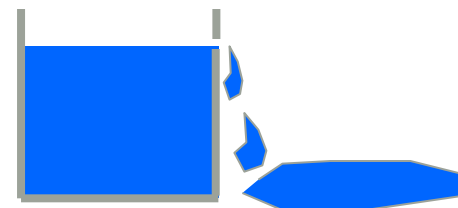


The Benchmarks

- Penman-Monteith



- Manabe bucket model

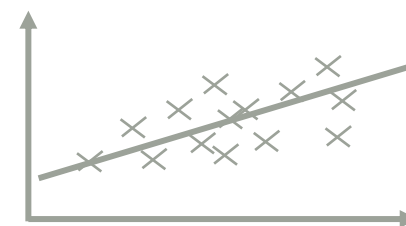


- Linear regressions

- Linear 1 var: $S_{w\downarrow}$

- Linear 2 var: $S_{w\downarrow}, T_a$

- Piecewise linear 3 var: $S_{w\downarrow}, T_a, q_a$

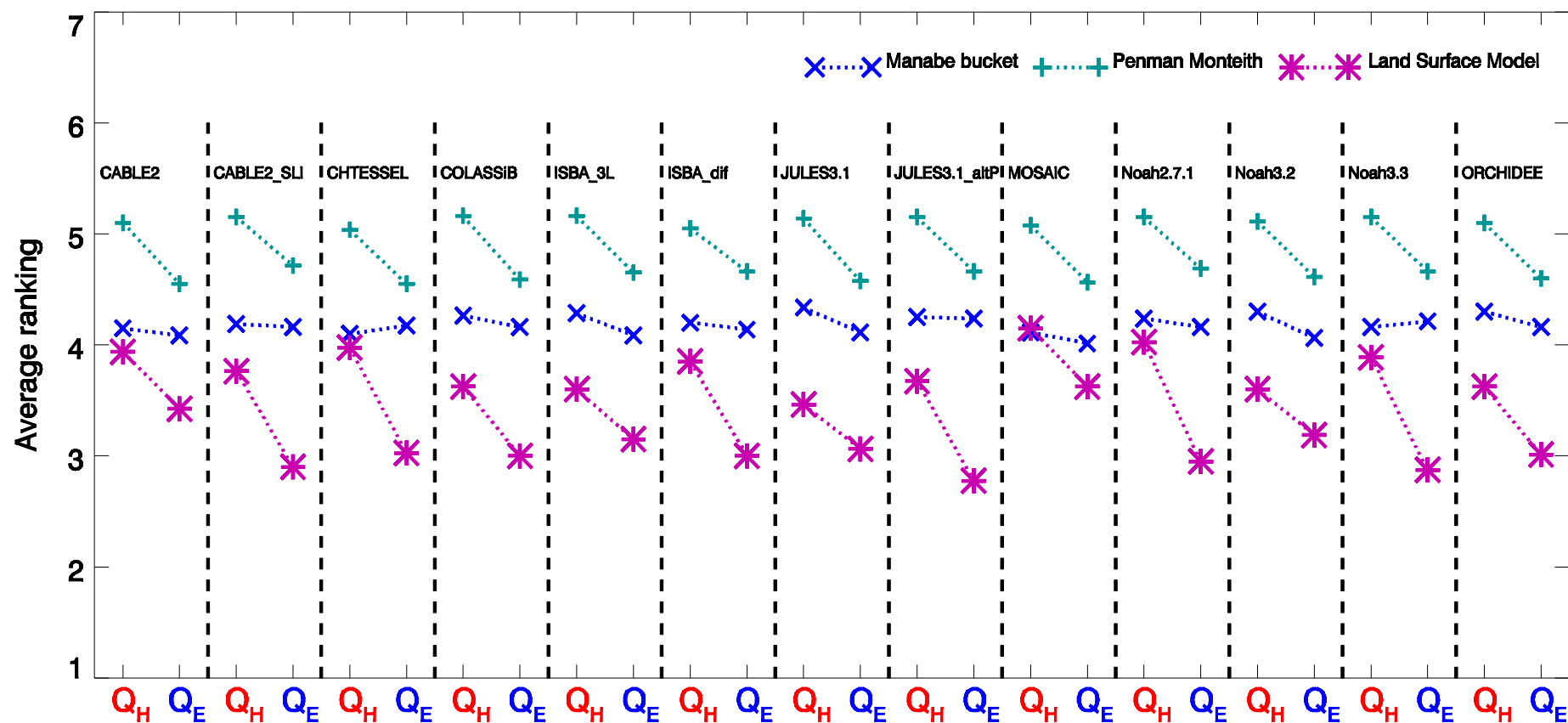




Benchmarking against common statistics

Mean Bias Error	MBE
Normalised Mean Error	NME
Standard Deviation	sd
Correlation coefficient	r

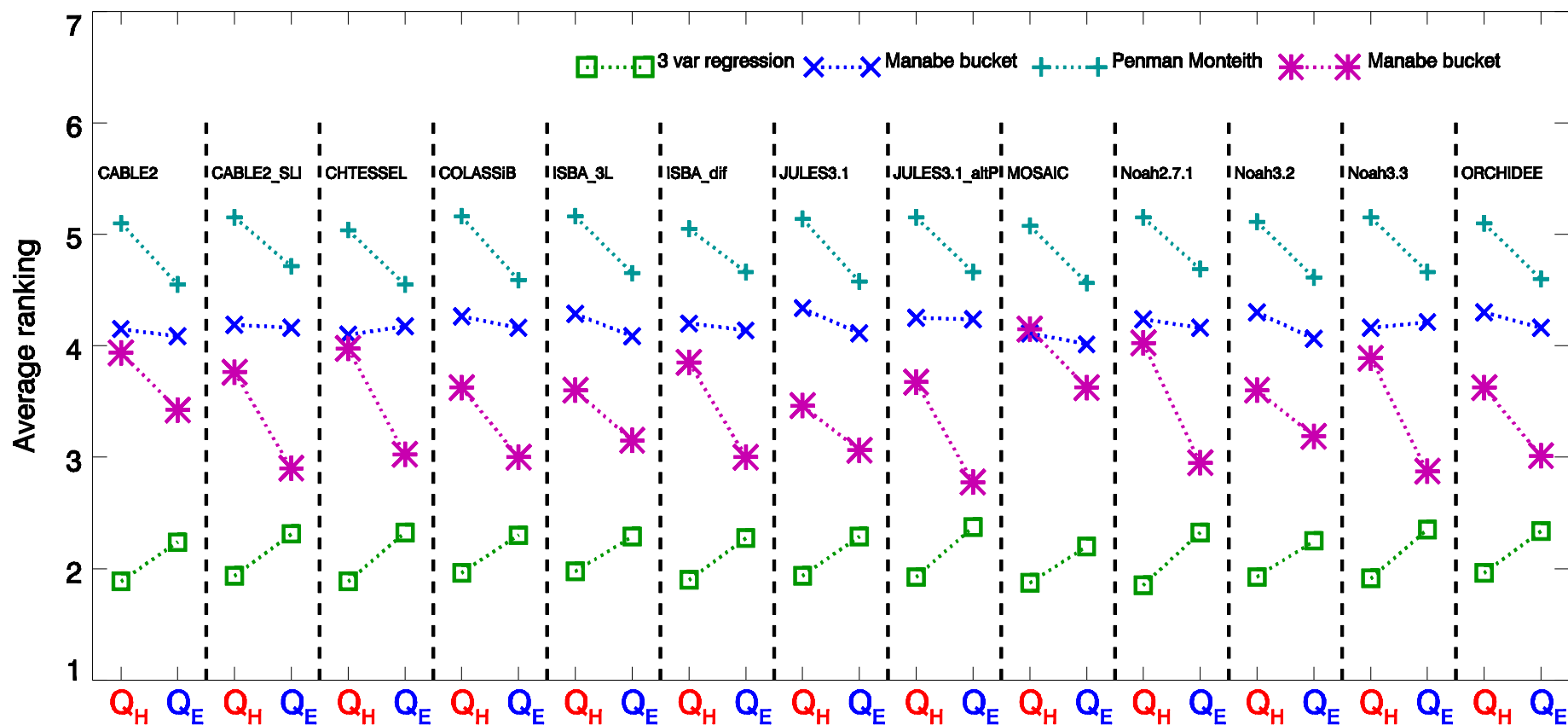
Common statistics



Benchmarking against common statistics

Mean Bias Error	MBE
Normalised Mean Error	NME
Standard Deviation	sd
Correlation coefficient	r

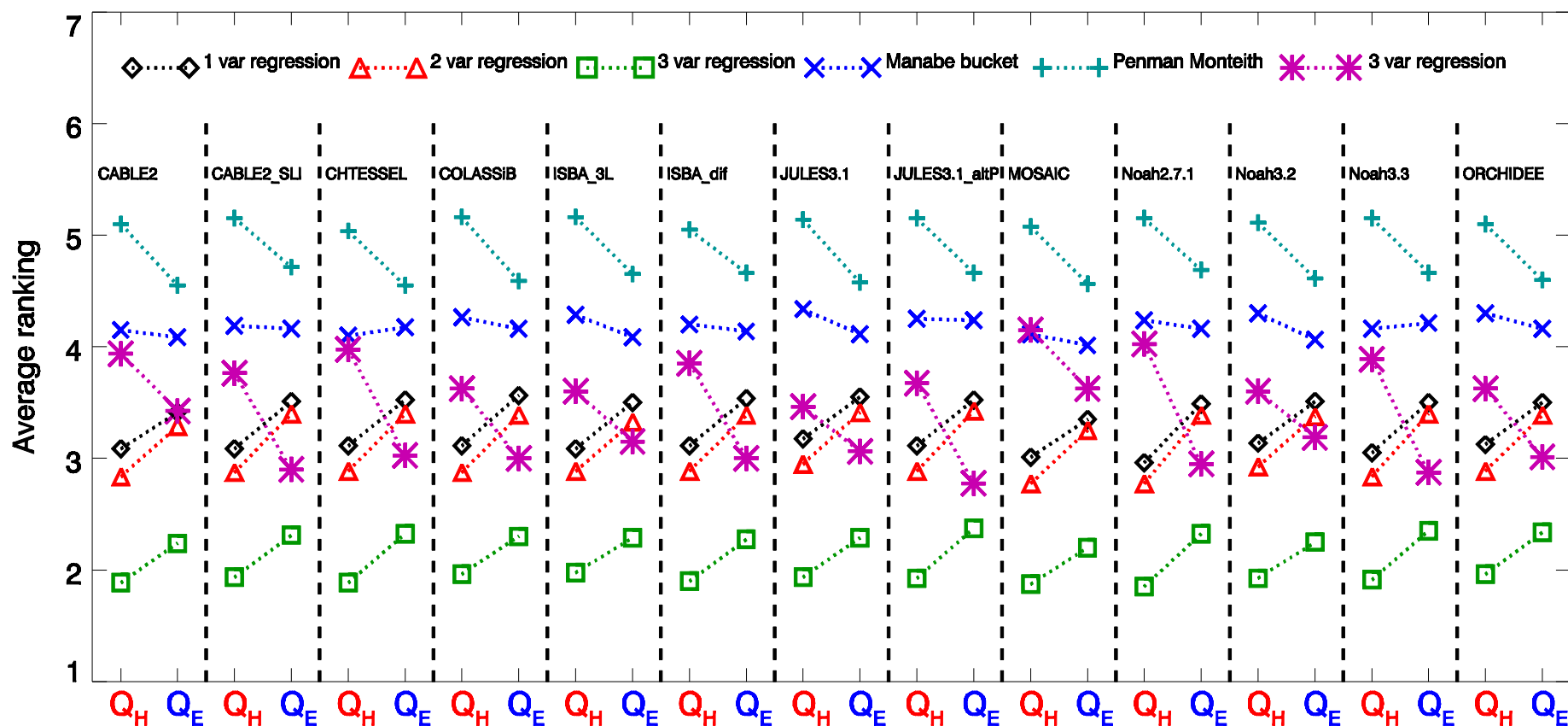
Common statistics



Benchmarking against common statistics

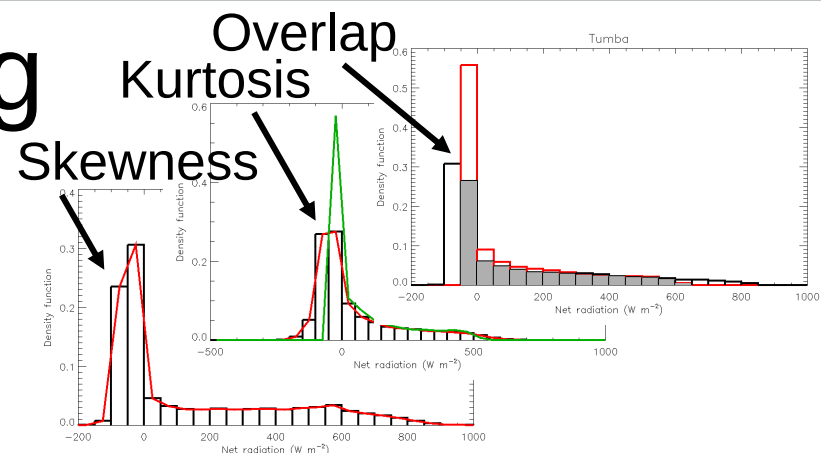
Mean Bias Error	MBE
Normalised Mean Error	NME
Standard Deviation	sd
Correlation coefficient	r

Common statistics

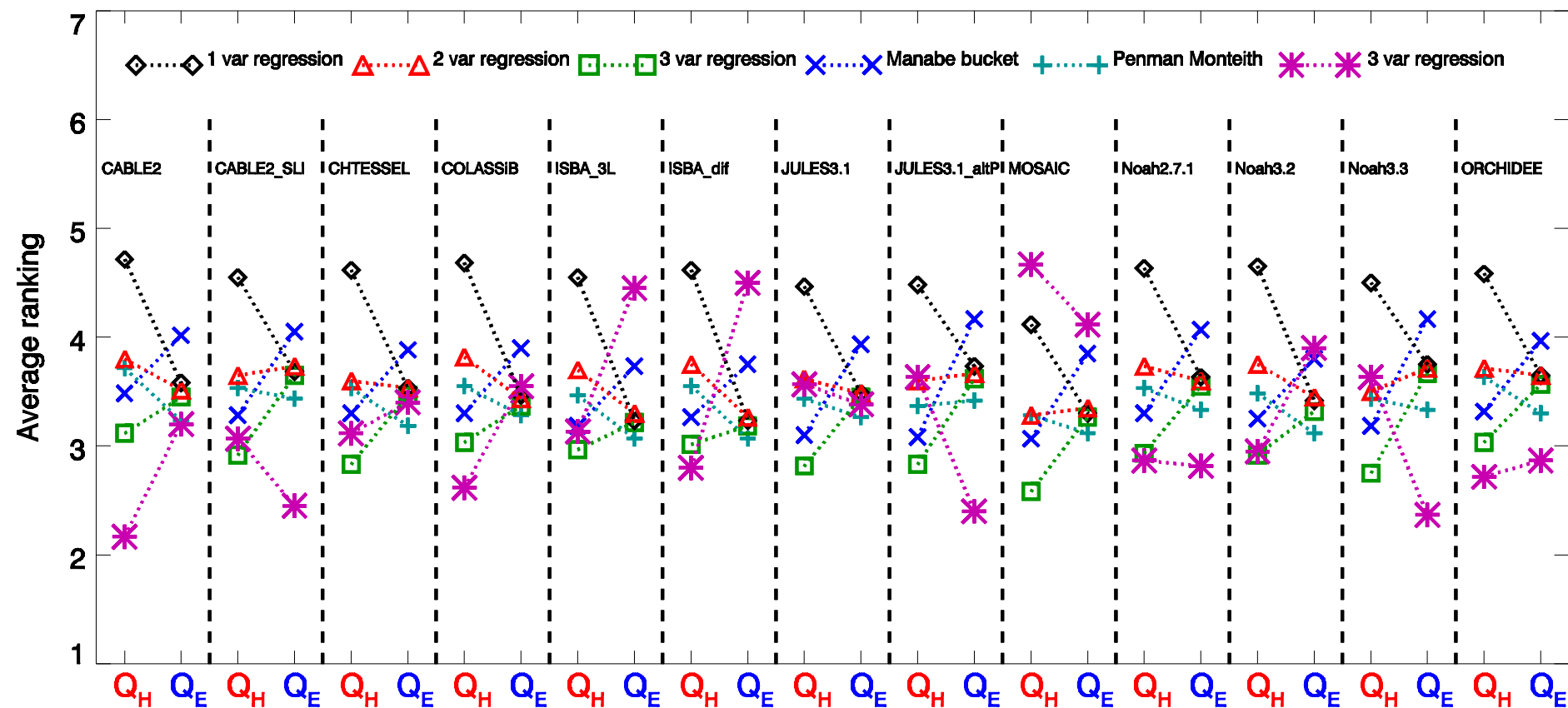




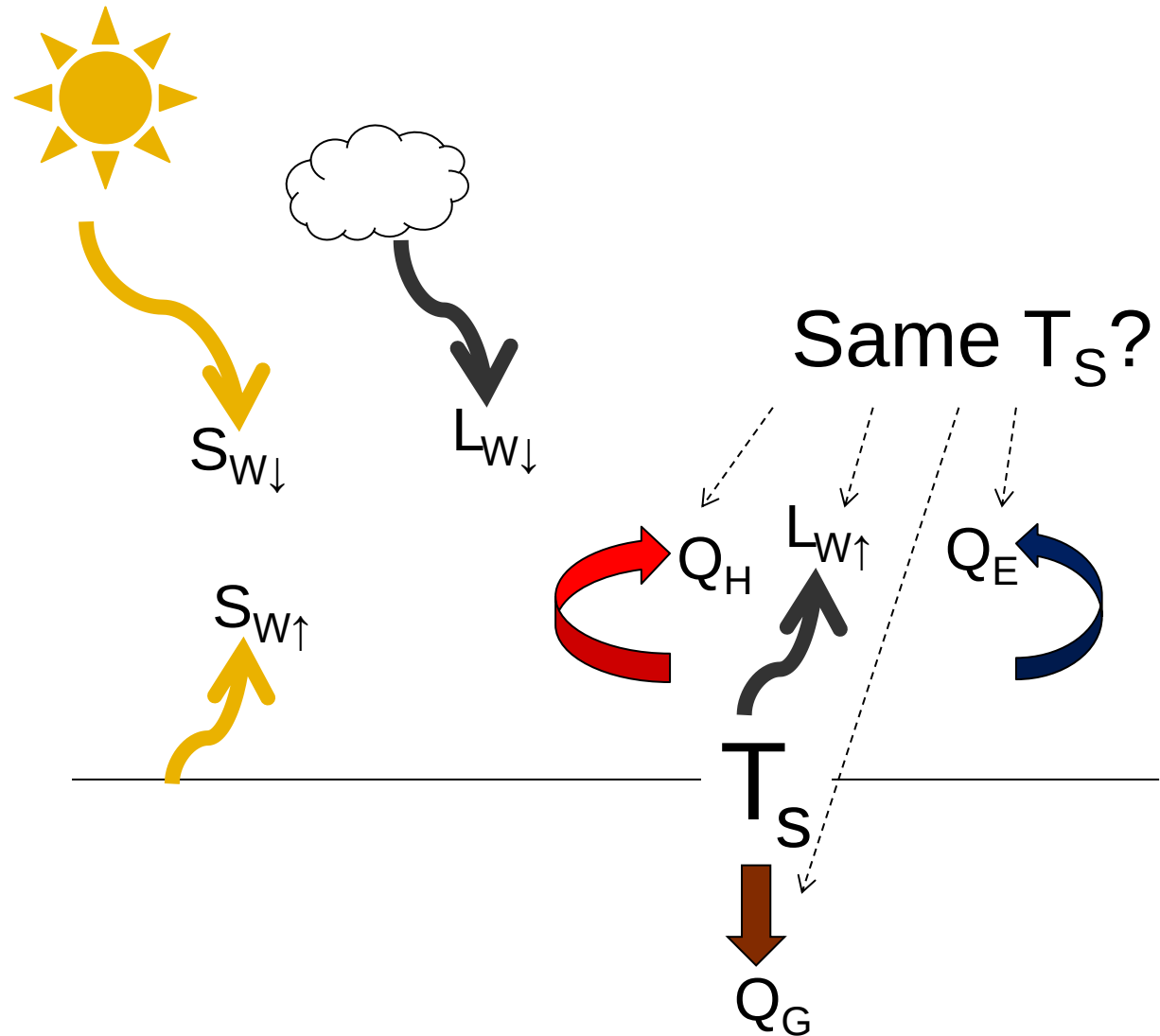
Benchmarking against distribution statistics



Distribution statistics



Surface energy balance





Met Office

Questions

