

Metrics	Mathematical expression	Range
Normalized mean bias	$\text{NMB} = \frac{\sum_{i=1}^n (M_i - O_i)}{\sum_{i=1}^n O_i}$	-1 to $+\infty$
Mean bias	$\text{MnB} = \frac{1}{N} \sum_{i=1}^n (M_i - O_i) = \bar{M} - \bar{O}$	$-\bar{O}$ to $+\infty$
Correlation coefficient	$R = \frac{\sum_{i=1}^n (M_i - \bar{M})(O_i - \bar{O})}{\left\{ \sum_{i=1}^n (M_i - \bar{M})^2 \sum_{i=1}^n (O_i - \bar{O})^2 \right\}^{\frac{1}{2}}}$	-1 to +1
Root mean square error	$\text{RMSE} = \sqrt{\frac{1}{N} \sum_{i=1}^n (M_i - O_i)^2}$	0 to $+\infty$
Mean absolute gross error	$\text{MAGE} = \frac{1}{N} \sum_{i=1}^n (M_i - O_i) $	0 to $+\infty$
Normalized mean bias factor	$\text{NMBF}(\bar{M} \geq \bar{O}) = \frac{\sum (M_i - O_i)}{\sum O_i}$	$-\infty$ to $+\infty$
	$\text{NMBF}(\bar{M} < \bar{O}) = \frac{\sum (M_i - O_i)}{\sum M_i}$	
Normalized mean absolute error factor	$\text{NMAEF}(\bar{M} \geq \bar{O}) = \frac{\sum M_i - O_i }{\sum O_i}$	0 to $+\infty$
	$\text{NMAEF}(\bar{M} < \bar{O}) = \frac{\sum M_i - O_i }{\sum M_i}$	