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| **Metric** | **Good at** | **Bad at** |
| R2 value: Correlation coefficient of the linear regression between the measured (x) and predicted (y) value. | Assessing precision and random uncertainty. Low precision (lots of random uncertainty) = low R2 value. | Assessing accuracy and systematic uncertainty. |
| Gradient and Intercept of the linear regression | Assessing systematic uncertainty, which will generate a gradient different from 1, and an intercept different from zero. | Assessing precision/random uncertainty (as averages all measurements). |
| Root mean square error (RMSE) aka. SEE | Describes how concentrated the data is around the linear regression. | Struggles to distinguish between low precision and accurate vs. high precision with a systematic offset. Sensitive to outliers. |
| Mean Absolute Error (MAE) | Similar to the RMSE but no squared term. Gives less weight to larger errors than the RMSE | Struggles to distinguish between low precision and accurate vs. high precision with a systematic offset |
| Mean Bias Error (MBE) | Identifies average model bias, as no absolute or squared term. | Doesn’t identify random error, as + and – errors cancel out. |