

1 **Modeling air pollution in Lebanon: evaluation at a suburban site in Beirut.**

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 15 **Supplement**

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 17 Table S1. Statistical indicators used for the evaluation of the meteorology.

Indicators	Definitions
Root mean square error (RMSE)	$\sqrt{\frac{1}{n} \sum_{i=1}^n (c_i - o_i)^2}$
Mean fractional bias (MFB) and mean fractional error (MFE)	$\frac{1}{n} \sum_{i=1}^n \frac{c_i - o_i}{(c_i + o_i)/2}$ and $\frac{1}{n} \sum_{i=1}^n \frac{ c_i - o_i }{(c_i + o_i)/2}$
Normalized mean bias (NMB) and normalized mean error (NME)	$\frac{\sum_{i=1}^n (c_i - o_i)}{\sum_{i=1}^n o_i}$ and $\frac{\sum_{i=1}^n ( c_i - o_i )}{\sum_{i=1}^n o_i}$
Mean normalized bias (MNB) and mean normalized error (MNE)	$\frac{1}{n} \sum_{i=1}^n \frac{c_i - o_i}{o_i}$ and $\frac{1}{n} \sum_{i=1}^n \frac{ c_i - o_i }{o_i}$
Correlation coefficient	$\frac{\sum_{i=1}^n (c_i - \bar{c})(o_i - \bar{o})}{\sqrt{\sum_{i=1}^n (c_i - \bar{c})^2} \sqrt{\sum_{i=1}^n (o_i - \bar{o})^2}}$ with $\bar{o} = \frac{1}{n} \sum_{i=1}^n o_i$ and $\bar{c} = \frac{1}{n} \sum_{i=1}^n c_i$

$c_i$ : modeled values,  $o_i$ : observed values,  $n$ : number of data pairs

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