



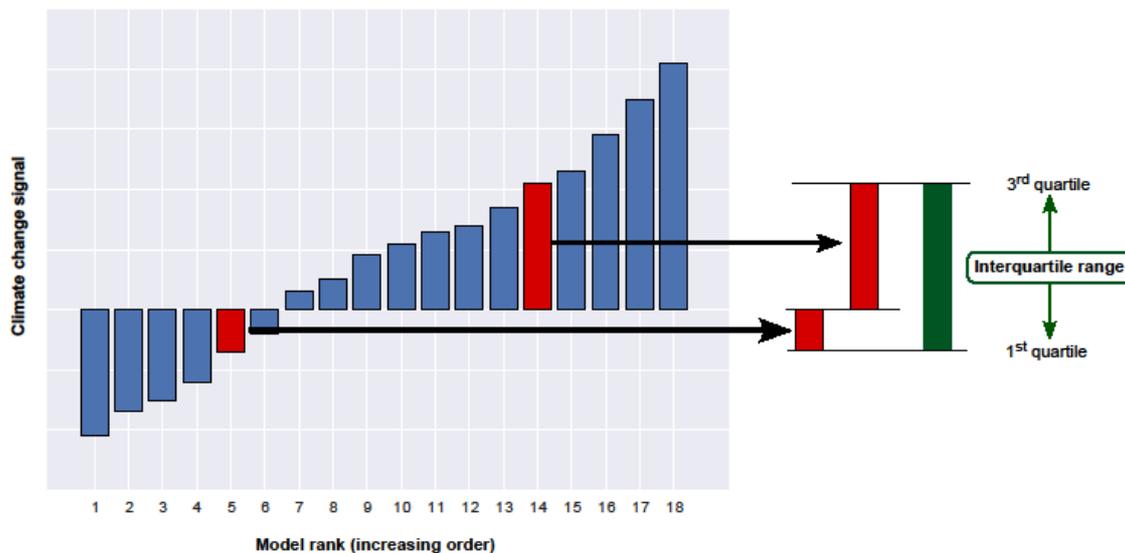
## How to interpret ensemble value range

The ensemble value range (interquartile range) is a confidence measure that provides information about the ensemble spread of the projected climate change signals. The ensemble value range indicates the range of the central half of the models, i.e. the models that group around the median of the models.

Figure 1 gives more details about the estimation of the ensemble value range. For a given grid point, all models are ordered according to their climate change signal. Then, the 1<sup>st</sup> and 3<sup>rd</sup> quartile model values are extracted (see box definition of quartiles). In our case, the 1<sup>st</sup> and 3<sup>rd</sup> quartiles correspond to the 5<sup>th</sup> (5<sup>th</sup>) and 14<sup>th</sup> (15<sup>th</sup>) model in the ranked sequence of 18 (19) models. The interquartile range is the difference between the 3<sup>rd</sup> and the 1<sup>st</sup> quartile.

### Definition of the quartiles:

The 1<sup>st</sup> and 3<sup>rd</sup> quartiles are the 25<sup>th</sup> and 75<sup>th</sup> percentiles. If  $n$  is the total number of models, the 25<sup>th</sup> percentile, for e.g., corresponds to the model having the rank  $0.25 \cdot n$ . In case the result is not an integer, it is rounded up. Example:  $n=18$ ,  $0.25 \cdot 18=4.5$ , is rounded up to 5.



**Figure 1** Schematic explanation of the interquartile range

### Good practice in interpreting the ensemble value range

We recommend using the ensemble value range in combination with the confidence level of agreement on sign of change and the ensemble mean change to retrieve some additional information about confidence level.

It is also important to know the limitations of the information given by the ensemble value range. In particular, the interquartile range cannot be used to estimate

- if the result shows a climate change signal that differs clearly from 0
- what values the value range extends to (for e.g., if an interquartile range of 7 is from -2 to +5 or from 1 to 8)