4 Observed and simulated entomological and parasitological values of the LMM$_{2010}$

Validation of LMM$_{2010}$ simulations in terms of $HBR_a$, $CSPR_a$, $Seas$, $MSeas$, $PR_a$, and $PR_{max,a}$ as well as $XSeas$ and $SSeas$ in the area of the 34 synoptic stations in West Africa as ordered in Figure 2.

Regarding $HBR_a$, $CSPR_a$, $Seas$, $MSeas$, $PR_a$, and $PR_{max,a}$ the simulated 34 annual values between 1973 and 2006 are illustrated as grey box-and-whisker plots (the numeric values of maxima beyond the scale of the ordinate are plotted on the upper abscissa). Field observations (green lines and box plots) are either displayed as a vertical line (two available measurements), a vertical line with the median (three or four values), or as a box-and-whisker plot ($\geq$ five data points). Each observation is furthermore inserted as a red circle and the number of observations is given above the entered observations (red digits).

With regard to $XSeas$, $SSeas$, and $ESeas$ each month is given a colour-coded rectangle representing the occasions for years between 1973 and 2006, when the malaria season finished in the model simulations. The simulated data (colour-filled rectangles) are compared to observed values (inserted as a digit). The frequency distribution (in numbers) regarding the simulated 34 values for 1973-2006 is given for each month. The frequencies of years with no (‘no’) and year-around (‘C’) transmission are also illustrated in the lowermost and topmost rows, respectively.

The skill score in terms of the particular variable ($SC(x)$), a measure of the performance of the simulations with regard to observed data, is denoted for every station as a blue digit.
Annual human biting rate ($HBR_a$)

Supplementary Figure 1: Same as Figure 3 but for $HBR_a$. 

SC(HBR) $\Sigma 37(52)$
Supplementary Figure 2: Same as Figure 3 but for CSPR_a.
Length of the malaria season ($Seas$)

Supplementary Figure 3: Same as Figure 3 but for $Seas$. 

<table>
<thead>
<tr>
<th>City</th>
<th>Podor</th>
<th>Rosso</th>
<th>Saint Louis</th>
<th>Dakaar</th>
<th>Langare</th>
<th>Gao</th>
<th>Tillabery</th>
<th>Mopti</th>
<th>Dori</th>
<th>Maradi</th>
<th>Nassy</th>
<th>Magaria</th>
<th>Djourou</th>
<th>Gaya</th>
<th>Po</th>
<th>Koldi</th>
<th>Bobo</th>
<th>Doulasse</th>
<th>Bagre</th>
<th>Soum</th>
<th>Youndi</th>
<th>Koumbia</th>
<th>Dassa</th>
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</thead>
<tbody>
<tr>
<td>Length (Seas)</td>
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<td>1</td>
<td>2</td>
<td>4</td>
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<td>3</td>
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<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

\[ \Sigma 31(42) \]
Supplementary Figure 4: Same as Figure 3 but for $MSeas$. 

Length of the main malaria season ($MSeas$)
Supplementary Figure 5: Same as Figure 3 but for PRₐ.
Annual maximum of the asexual parasite ratio ($PR_{max,a}$)

Supplementary Figure 6: Same as Figure 3 but for $PR_{max,a}$. 

$\Sigma 16(25)$ $\Sigma (PR_{max,a})$
Month of maximum malaria transmission ($X_{\text{Seas}}$)

Supplementary Figure 7: Same as Figure 4 but for $X_{\text{Seas}}$.

Start of the malaria season ($S_{\text{Seas}}$)

Supplementary Figure 8: Same as Figure 4 but for $S_{\text{Seas}}$. 