**Corrections of 12 January 2021:**

**P.3, l. 48:**

TS1  Please give an explanation of why this needs to be changed. We have to ask the handling editor for approval. Thanks.

**Response**: The small $t$ is an index, it runs from 1 until T. In total we have T intermediate temperatures \phi. Thus, at the last iteration, $t$ becomes $T$.

**P. 3, l. 61:**

TS2  Please give an explanation of why this needs to be changed. We have to ask the handling editor for approval. Thanks.

**Response**: This is related to the above change, at the final iteration $t=T$, the temperature is set to $\phi\_T = 1$.

**P. 6, l. 47 (Eq. 14):**

TS3  Please give an explanation of why this needs to be changed. Please note that the former change has to be explained as well. We have to ask the handling editor for approval. Thanks.

**Response**: In the latest change only asked for the brackets around R to be left out and this would only improving the readability, it does not change the mathematical formula. Yet in an earlier typeset change we realized that

the equation was not correct as the \beta was within the brackets around R and the brackets where to the power of (-1). R needs to be inverted but for the formula to be correct \beta should not be inverted.

**P. 6, l. 54 (Eq. 15):**

TS4 Please give an explanation of why this needs to be changed. Please note that the former change has to be explained as well. We have to ask the handling editor for approval. Thanks.

**Response**: Analogously to TS3: In the latest change only asked for the brackets around R to be left out and this would only improving the readability, it does not change the mathematical formula. Yet in an earlier typeset change we realized that the equation was not correct as the 1-\beta was within the brackets around R and the brackets where to the power of (-1). R needs to be inverted but for the formula to be correct 1-\beta should not be inverted.

**Corrections of 8 January 2021:**

Page 3, line 48: \phi\_T = 1

Page 3, line 61: we set $\phi\_{t=T} = 1$,

Page 6, line 45: no brackets around R.

Page 6: line 47: no square brackets around R.

**Corrections of 6 January 2021**

TS5: Please confirm equation.

The \beta has to be outside of the brackets around mathbb{R}^{-1}, i.e.,

\begin{equation} \label{eq:hybrid}

 g\_1(\vec{u}; \vec{y}\_\textrm{obs}) =  g(\vec{u}; \vec{y}\_\textrm{obs})^\beta= \exp\left[-\frac{1}{2} (G(\vec{u}) -  \vec{y}\_\textrm{obs})^\prime \beta(\textbf{R})^{-1} (G(\vec{u}) -  \vec{y}\_\textrm{obs})\right]

\end{equation}

TS6: Please confirm equation.

**Response:** Same as in the response to TS5. It should be:

\begin{equation}

g\_2(\vec{u}; \vec{y}\_\textrm{obs})=  g(\vec{u}; \vec{y}\_\textrm{obs})^{(1-\beta)} = \exp\left[-\frac{1}{2} (G(\vec{u}) -  \vec{y}\_\textrm{obs})^\prime (1-\beta)[\textbf{R}]^{-1} (G(\vec{u}) -  \vec{y}\_\textrm{obs})\right].

\end{equation}