Corrigendum to Geosci. Model Dev., 12, 425–440, 2019
https://doi.org/10.5194/gmd-12-425-2019-corrigendum

Geoscientific Model Development
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EGU

Corrigendum to "A hydrological cycle model for the Globally Resolved Energy Balance (GREB) model v1.0" published in Geosci. Model Dev., 12, 425–440, 2019

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Published: 14 May 2019

In the mentioned paper, the fitting constant c_q is missing in Eq. (11) and in Table 2. The corrected Eq. (11) and line 19 on page 7 is

$$\Delta q_{\text{precip}} = r_{\text{precip}} \cdot q_{\text{air}} \cdot \left(c_q + c_{\text{rq}} \cdot \text{rq} + c_\omega \cdot \omega_{\text{mean}} + c_{\omega\text{SD}} \cdot \omega_{\text{SD}}\right). \quad (11)$$

The model parameters, r_{precip}, c_q, c_{rq}, c_ω and $c_{\omega\text{SD}}$, are fitted to minimise the root mean square error (RMSE) between observations and GREB-simulated precipitation.

The corrected Table 2 is as follows.

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Table 2. Variables of the GREB model.

Variable	Dimension	Description
c_{eva}	constant	Evaporation efficiency
$c_{\mathrm{eva-temp}}$	constant	Temperature scaling of evaporation
c_q	constant	Precipitation parameter for spec. humidity
c_{turb}	constant	Turbulent wind offset for evaporation
c_{rq}	constant	Precipitation parameter for relative humidity
c_ω	constant	Precipitation parameter for ω
$c_{\omega\mathrm{SD}}$	constant	Precipitation parameter for standard deviation of ω
f	constant	Convergence scaling parameter
g	constant	Gravitational acceleration
q_{air}	x, y, t	Atmospheric humidity
q_{sat}	x, y, t	Saturation pressure
$q_{\mathrm{sat-skin}}$	x, y, t	Saturation pressure with temperature offset
r_{precip}	constant	Mean lifetime of water vapour
r_{qviwv}	constant	Regression between atmospheric humidity and vertically integrated water vapour
rq	x,y, t	Relative humidity
T_{surf}	x,y, t	Surface temperature
$\lvert u_* \rvert$	x,y, t	Absolute wind climatology
$\boldsymbol{u}$	x, y, t	Horizontal wind climatology
z_{atmos}	constant	Scaling height of atmosphere
z_{topo}	x, y, t	Topographic height
z_{vapour}	constant	Scaling height of water vapour
$\vartheta_{\mathrm{soil}}$	x, y, t	Surface wetness fraction
ρ_{air}	constant	Density of air
ω_{SD}	x, y, t	Standard deviation of vertical wind climatology
Δq_{eva}	x, y, t	Mass flux for the atmospheric humidity by evaporation
$\Delta q_{\mathrm{precip}}$	x, y, t	Mass flux for the atmospheric humidity by precipitation
$\Delta q_{\mathrm{correct}}$	x, y, t	Mass flux correction of specific humidity
$\Delta q_{\mathrm{cor-circul}}$	x, y, t	Mass flux correction due to circulation
$\Delta q_{\mathrm{cor-evapo}}$	x, y, t	Mass flux correction due to evaporation
$\Delta q_{\mathrm{cor-precip}}$	x, y, t	Mass flux correction due to precipitation
$\Delta q_{\mathrm{precip-GREB}}$	x, y, t	Precipitation change in GREB
$\Delta q_{\mathrm{precip-OBS}}$	x, y, t	Precipitation change in observations
Δt	constant	Model integration time step
$\mathrm{d}t_{\mathrm{crcl}}$	constant	Model integration time step for circulation
κ	constant	Isotropic diffusion coefficient
ω	x, y, t	Vertical velocity in pressure coordinates