HYPE lake implementation for one outlet:

Parameters:

|  |  |  |
| --- | --- | --- |
| name | unit | explanation |
|  | [m] | Elevation of emergency spillway |
|  | [m] | Elevation below which primary spillway flow is restricted |
|  | [m] | Minimum elevation below which outflow is zero |
|  | [-] | The rate of the flow over the spillway (range: greater than 0, as an estimate less than 2500; if is set to 1 that mean per 1 meter elevation above spillway we have 2500). |
|  | [-] | The power of the spillway flow (range: greater than 0, as an estimate less than 5). |
|  | [m3/s] | The average (yearly or long term?) output from main spillway; never seen to be updated; |
|  | [-] | Amplification of the outflow from the main spillway (range: greater than 0 and less 4) |
|  | [day from 1st January] | Day of the year for the first of January, phase difference to shift the maximum over time. (default to 100, after snow melt) |
|  | [-] | Flag to indicate if HYPE lake is natural |
|  | [m2] | Average lake area in m2. |

Variables (fluxes and states):

|  |  |  |
| --- | --- | --- |
| name | unit | explanation |
|  | [m] | Simulation elevation |
|  | [-] | Rate of the |
|  |  | Day of the year for the current simulation time |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Schematization:

Shape

Description automatically generated with medium confidence

Parameterization:

if hydro power; else

, in which

References:

<https://doi.org/10.1016/j.envsoft.2021.105025>