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# Translating aboveground cosmic-ray neutron intensity to high-frequency soil moisture profiles at sub-kilometer scale

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**Supplemental Table: List of default and perturbed parameters for the Noah model used in this study.**

| Parameter | Description | Kendall | | Nebraska | | Park Falls | |
|---|---|---|---|---|---|---|---|
| | | Default | Perturbed | Default | Perturbed | Default | Perturbed |
| fxexp | bare soil evaporation exponent | 2.0 | 2.2 | 2.0 | 2.2 | 2.0 | 2.2 |
| refdk | reference value for saturated hydraulic conductivity (m $s^{-1}$) | 2.0E-06 | 2.1E-06 | 2.0E-06 | 2.1E-06 | 2.0E-06 | 2.1E-06 |
| refkdt | reference value for surface infiltration parameter | 3.0 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 |
| bb | Clapp and Hornberger ‘‘b’’ parameter | 5.25 | 5.35 | 8.72 | 8.89 | 4.74 | 4.83 |
| refsmc | soil moisture threshold for onset of some transpiration stress ($m^3$ $m^{-3}$) | 0.329 | 0.325 | 0.387 | 0.383 | 0.383 | 0.379 |
| drysmc | top layer soil moisture threshold at which direct evaporation from soil ceases ($m^3$ $m^{-3}$) | 0.066 | 0.070 | 0.120 | 0.128 | 0.047 | 0.050 |
| wltsmc | soil moisture wilting point ($m^3$ $m^{-3}$) | 0.066 | 0.060 | 0.120 | 0.109 | 0.047 | 0.043 |
| satdk | saturated hydraulic conductivity (m $s^{-1}$) | 3.38E-06 | 3.61E-06 | 2.04E-06 | 2.18E-06 | 5.23E-06 | 5.58E-06 |
| satdw | saturated soil diffusivity | 1.43E-05 | 1.44E-05 | 2.37E-05 | 2.70E-05 | 8.05E-06 | 8.08E-06 |
| rs | minimum stomatal resistance (s $m^{-1}$) | 40.0 | 39.0 | 40.0 | 39.0 | 125.0 | 122.0 |