

Interactive comment on “Use of cosmic ray neutron sensors for soil moisture monitoring in forests” by I. Heidbüchel et al.

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Thank you for providing us with information on the conversion of atmospheric pressure to shielding depth. Now we can add shielding depth to the correction equation for atmospheric pressure (p 9821, lines 5-12):

'... $N_p = N_{raw} * e^{\left(\frac{x-x_0}{L}\right)}$ (1), with N_p being the pressure corrected neutron counts (counts h-1), N_{raw} the raw neutron counts (counts h-1), x the atmospheric shielding depth (g cm-2) for every time step (derived from atmospheric pressure measured directly in the CRS case), x_0 the average atmospheric shielding depth (g cm-2) for the entire measurement period and L the effective nucleon attenuation length for high-energy neutrons (for our site we assumed a value of 135.9 g cm-2 which is equivalent

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to 133.3 hPa) (Desilets and Zreda, 2003). To convert atmospheric pressure (hPa) into shielding depth (g cm⁻²) the atmospheric pressure has to be multiplied by 1.0194 s² m⁻¹.

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