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Technical Note: Measuring condensation sink and ion sink of atmospheric aerosols with the electrical low pressure impactor (ELPI)

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Abstract. We investigate the suitability of ELPI for condensation sink and ion sink measurements. The aim is to find the simple calibration factors by which the measured ELPI current can be converted to condensation or ion sinks. The calibration is based on DMPS and ELPI measurements within the period 15–25 May 2005 at a boreal forest site in Southern Finland. The values of condensation sink and ion sink were calculated from the DMPS size distributions using their theoretical definitions. After that the values were compared to theoretical and measured ELPI current, and calibration factors were specified. For condensation sink the calibration factor was found to be 7.27E-06 s^{-1} fA^{-1} and for ion sink 8.55E-06 s^{-1} fA^{-1}. Simply by multiplying the total current of the outdoor ELPI by these factors, the values of condensation sink and ion sink can be measured.

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