

Sampling and non-sampling errors in throughfall deposition

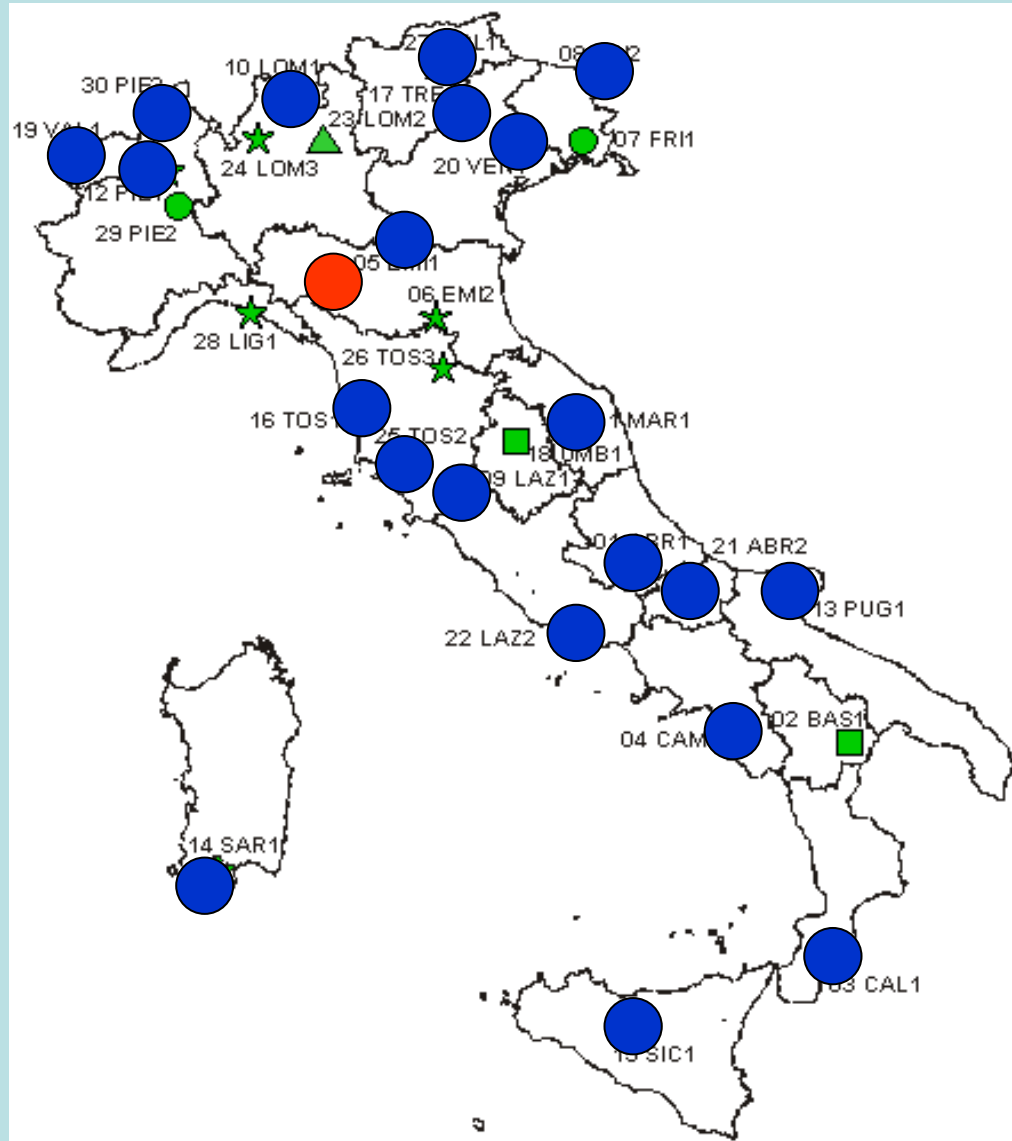


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Deposition plots (Test plot)





16 national samplers

30 FutMon samplers



NON-SAMPLING ERRORS

In-lab RSE was estimated from control chart at different concentration. For each weekly analysis and analyte, a RSD value was obtained from the control chart with concentration closer to the measured value. A yearly RSE was obtained by volume weighted average of those RSE.

Among-labs RSE was similarly estimated, on the basis of the robust SD of the results of 2009 FutMon Working Ring Test. In-lab variance was subtracted from among-labs variance.

The effect of **shipping time** was evaluated comparing the results of 4 samples analysed as soon as possible and one week after collection, again subtracting in-lab variance from shipping variance.



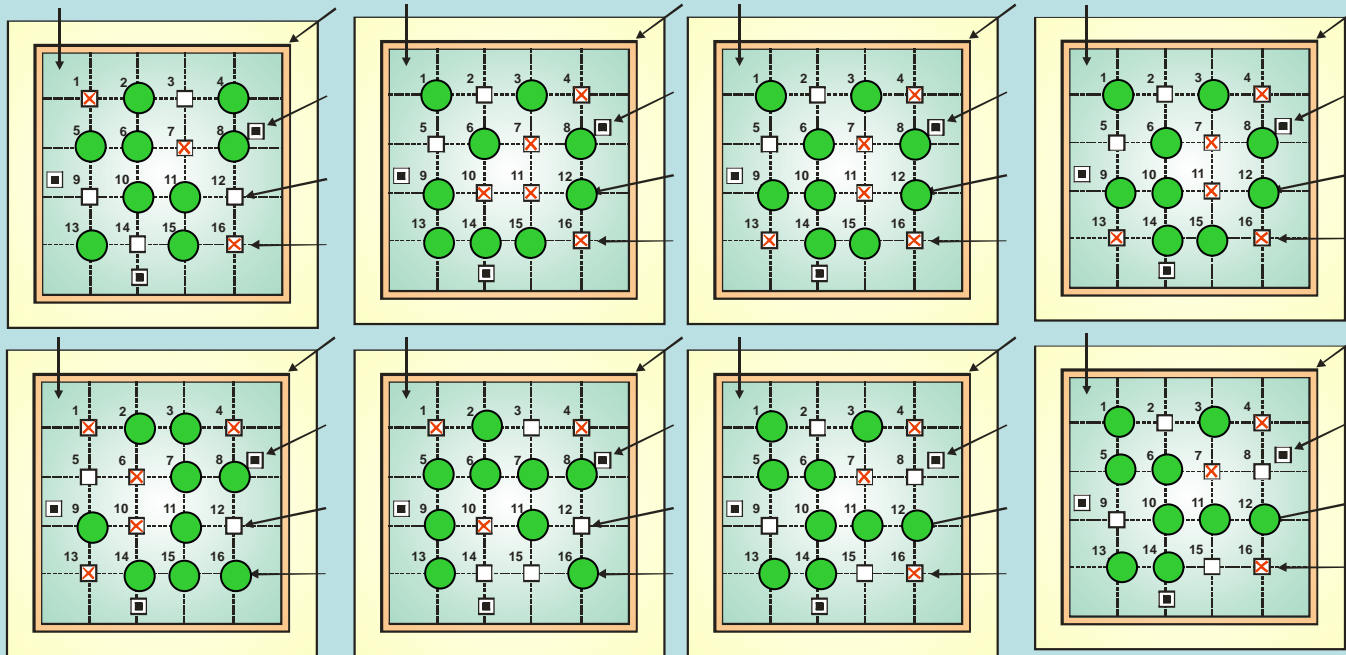
SAMPLING ERRORS

The error in the **amount of precipitation** collected, related to sampler shape, was estimated comparing over 5 years the total deposition collected open field using 3 funnel samplers with the values measured by the use of an automatic weather station.

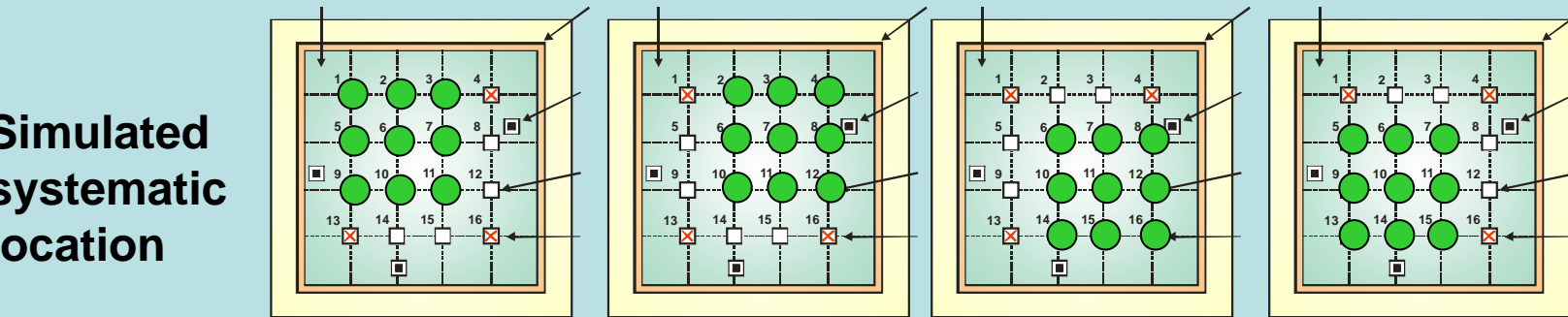
The effect of **sampler location** was evaluated by comparing simulated samples obtained from 9 random selected sampler and from 9 regularly located samplers.

The effect of **sampler number** was estimated from the regressions shown above.



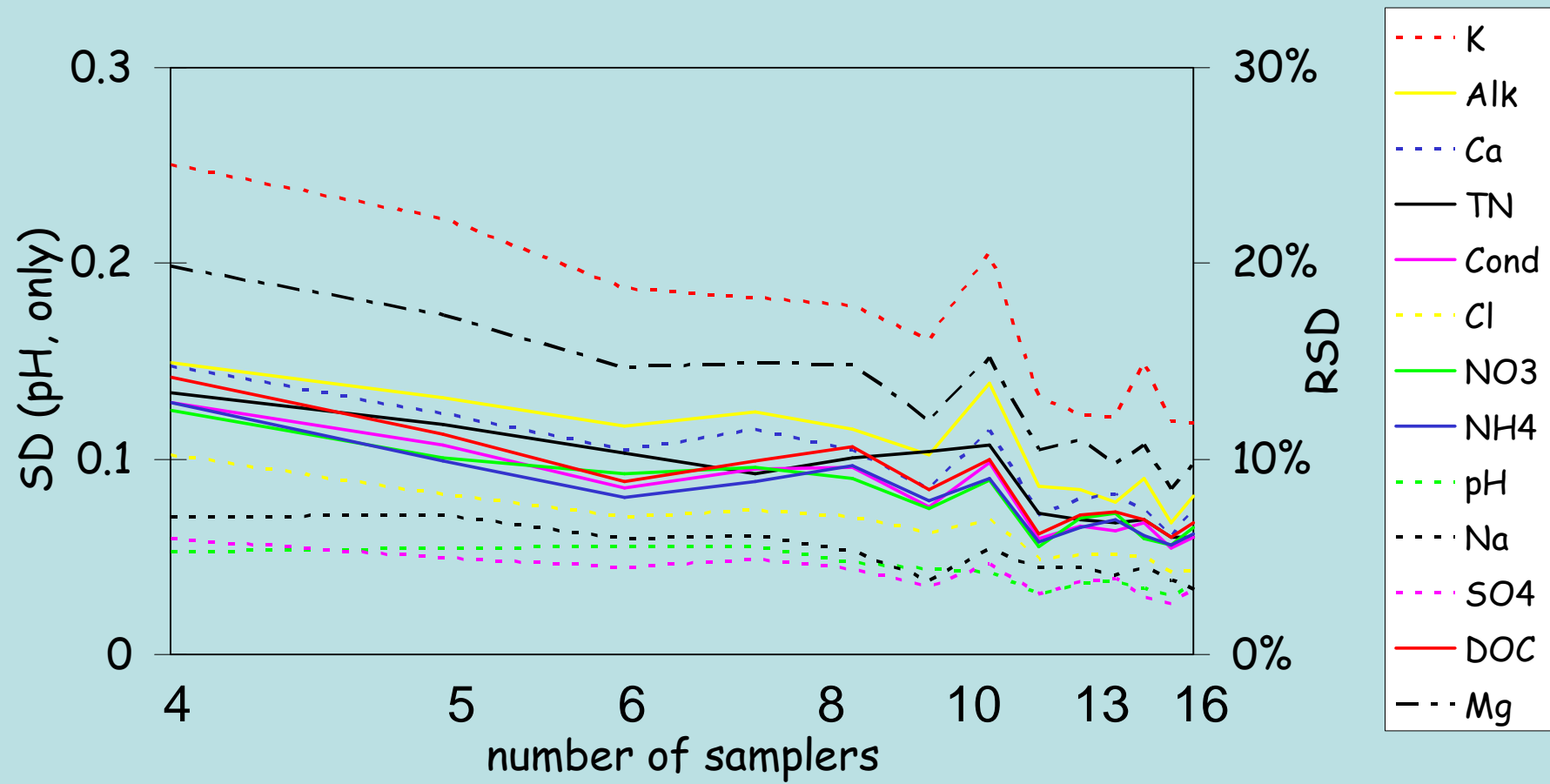


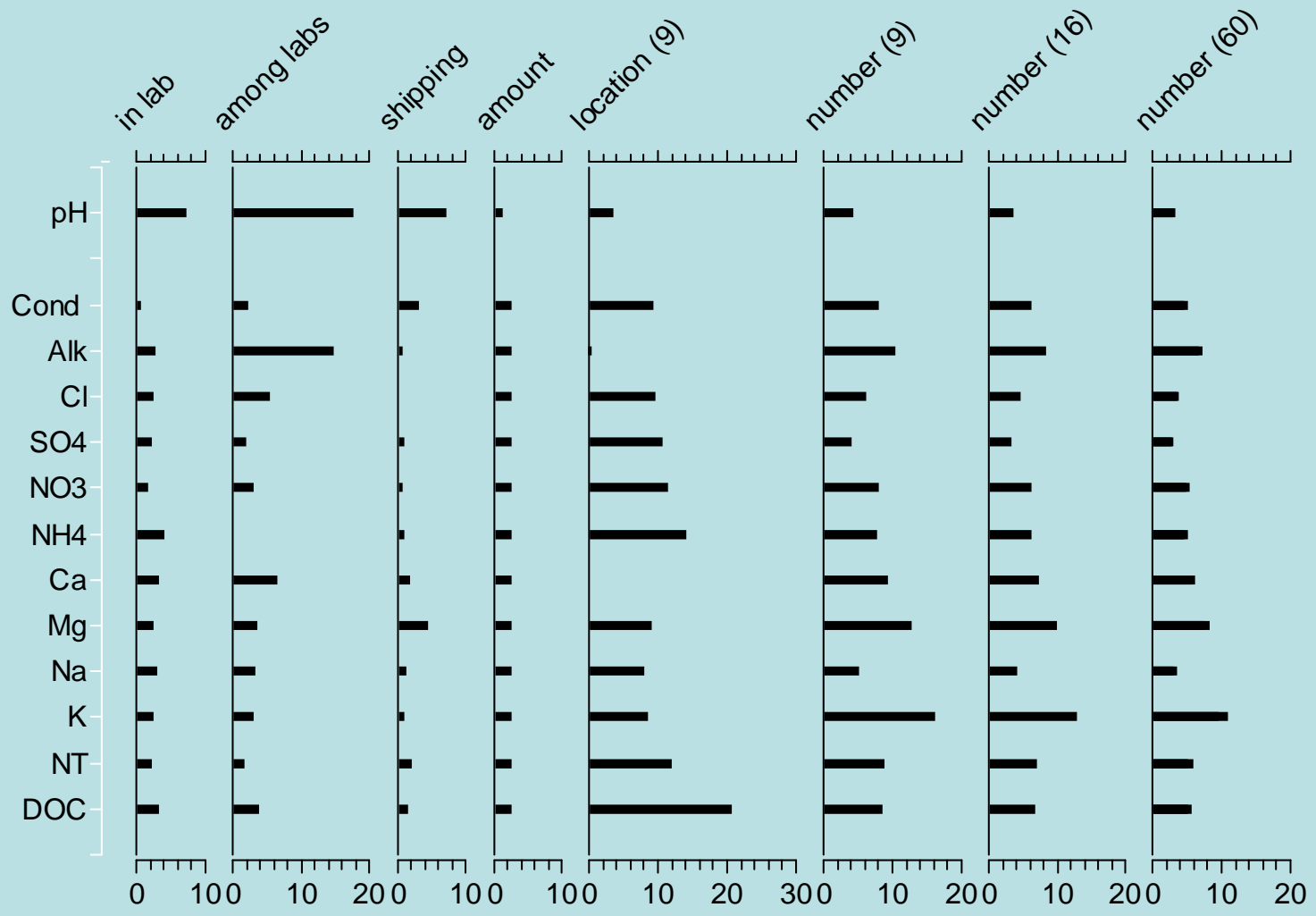
**Simulated
random
location**



**Simulated
systematic
location**







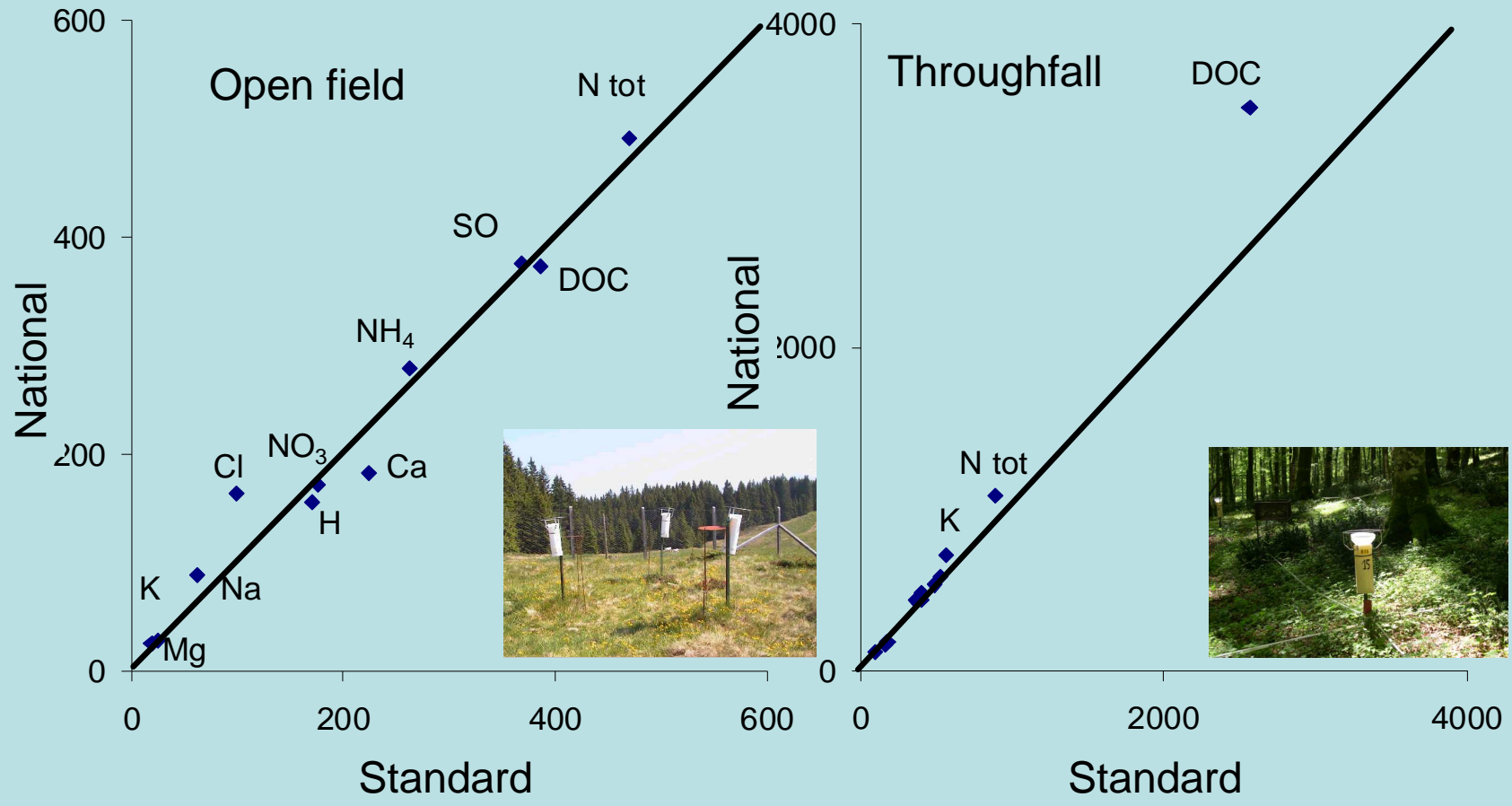
For **pH** and **alkalinity**, among labs variability is larger than sampling error, pointing to the opportunity of further improving analytical comparability for these variables.

To reduce non-sampling errors, a (reasonable) increase in sampler number **does not** seem to give relevant improvement. However the effect of using **random** located collectors instead of regularly located collectors is evident.

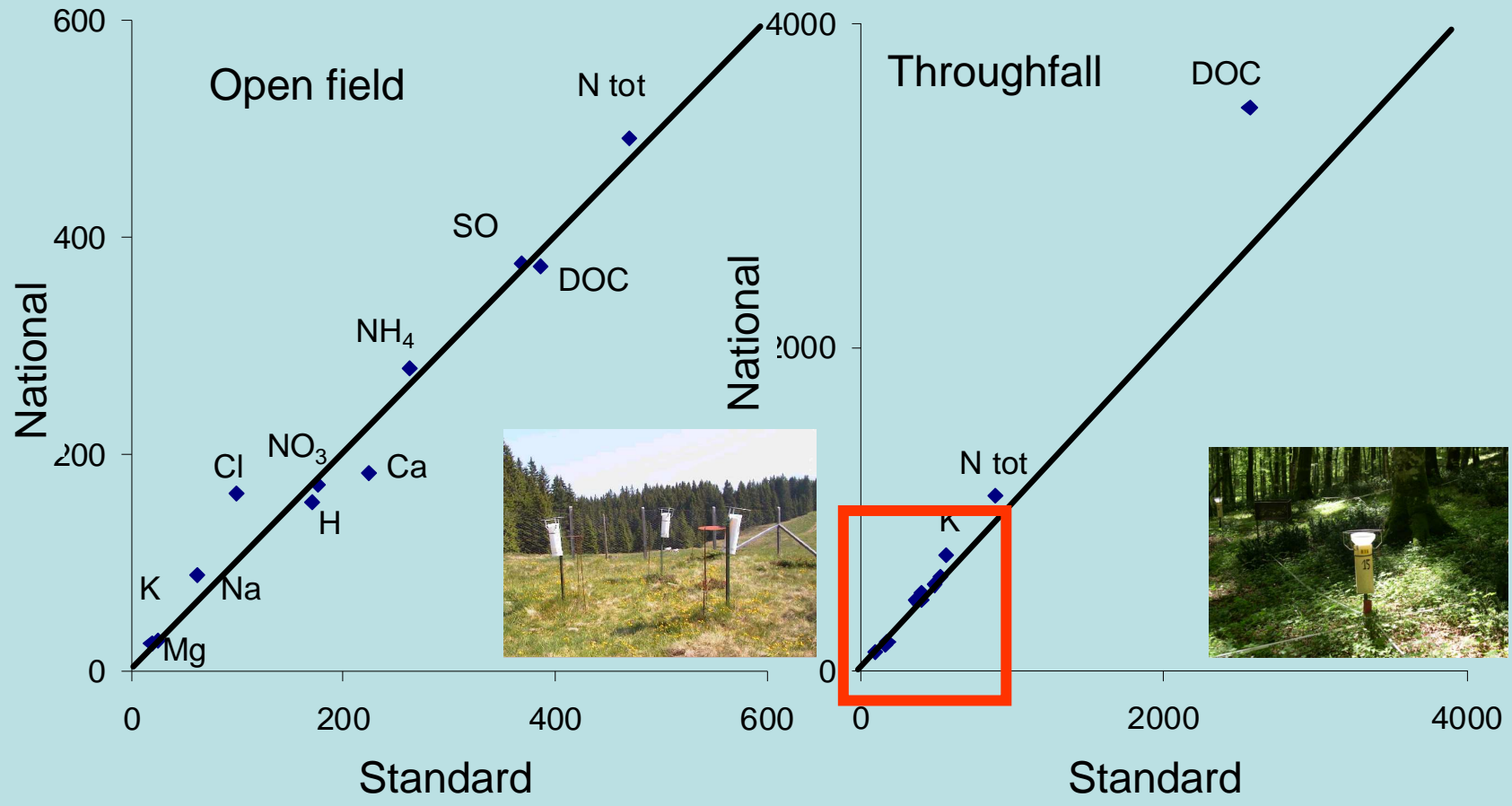
However these results are related to the particular sampling plot used for this study, and cannot be extended to the whole network without further investigation.



Sampler comparison 16/06/09 -> 10/11/09



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