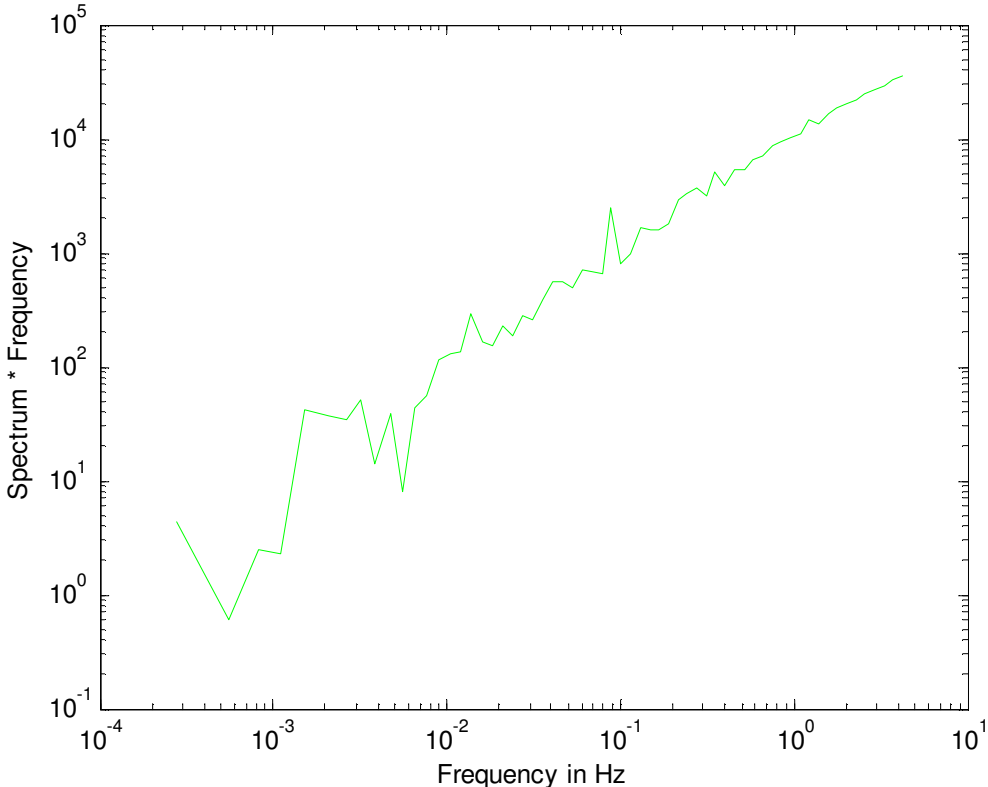
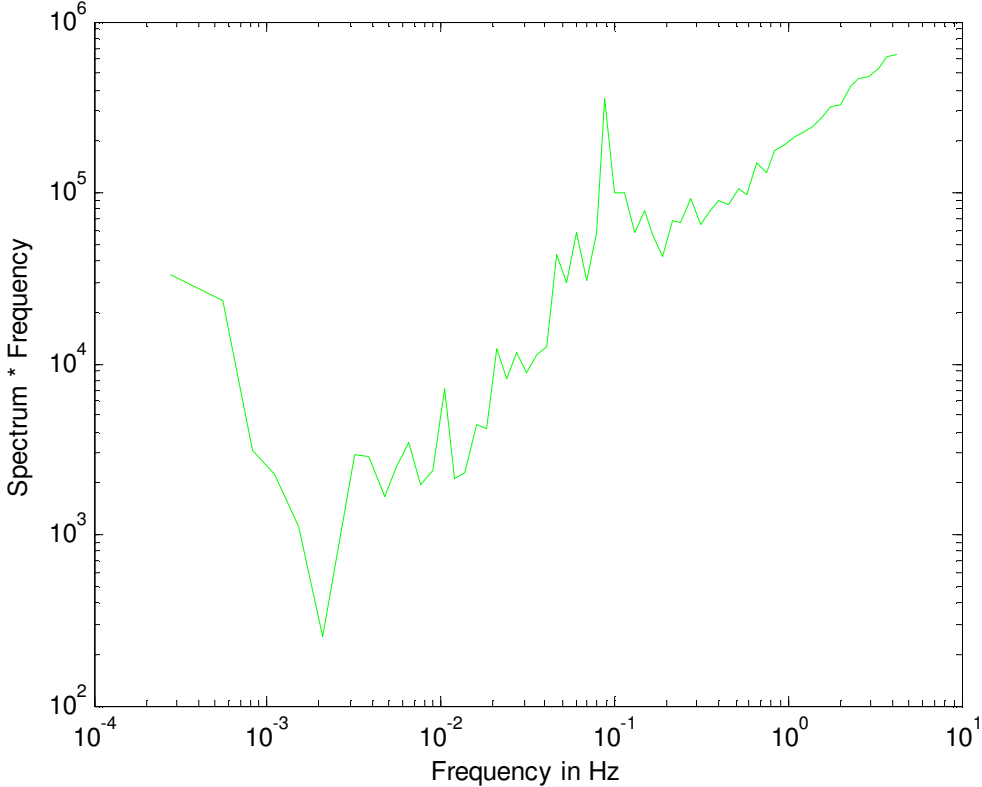


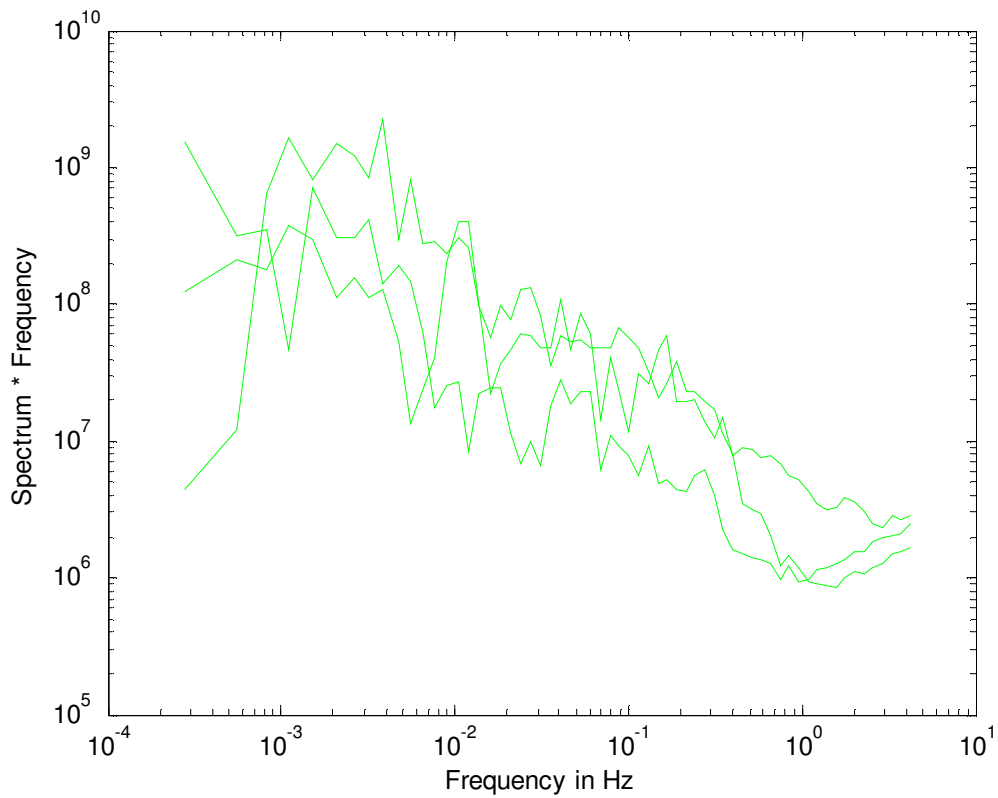
Power Spectrum Peak Issue



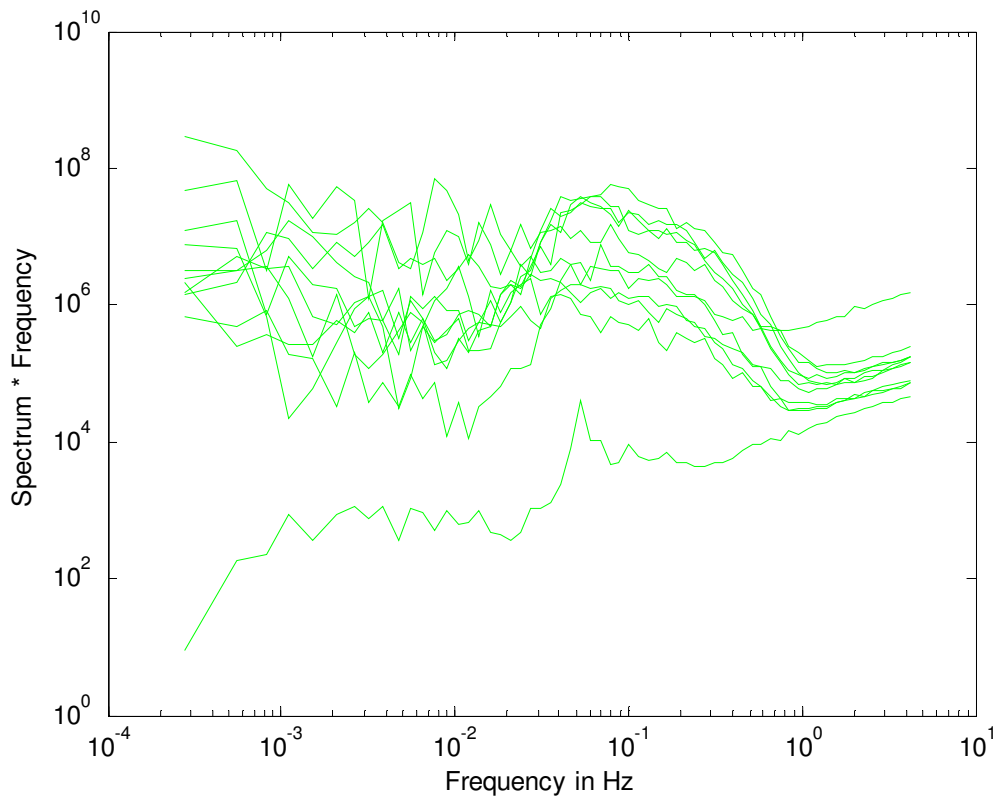
Spectrum of 107 hour 9, zero ozone insertion of a constant O3 concentration ~ 20ppb



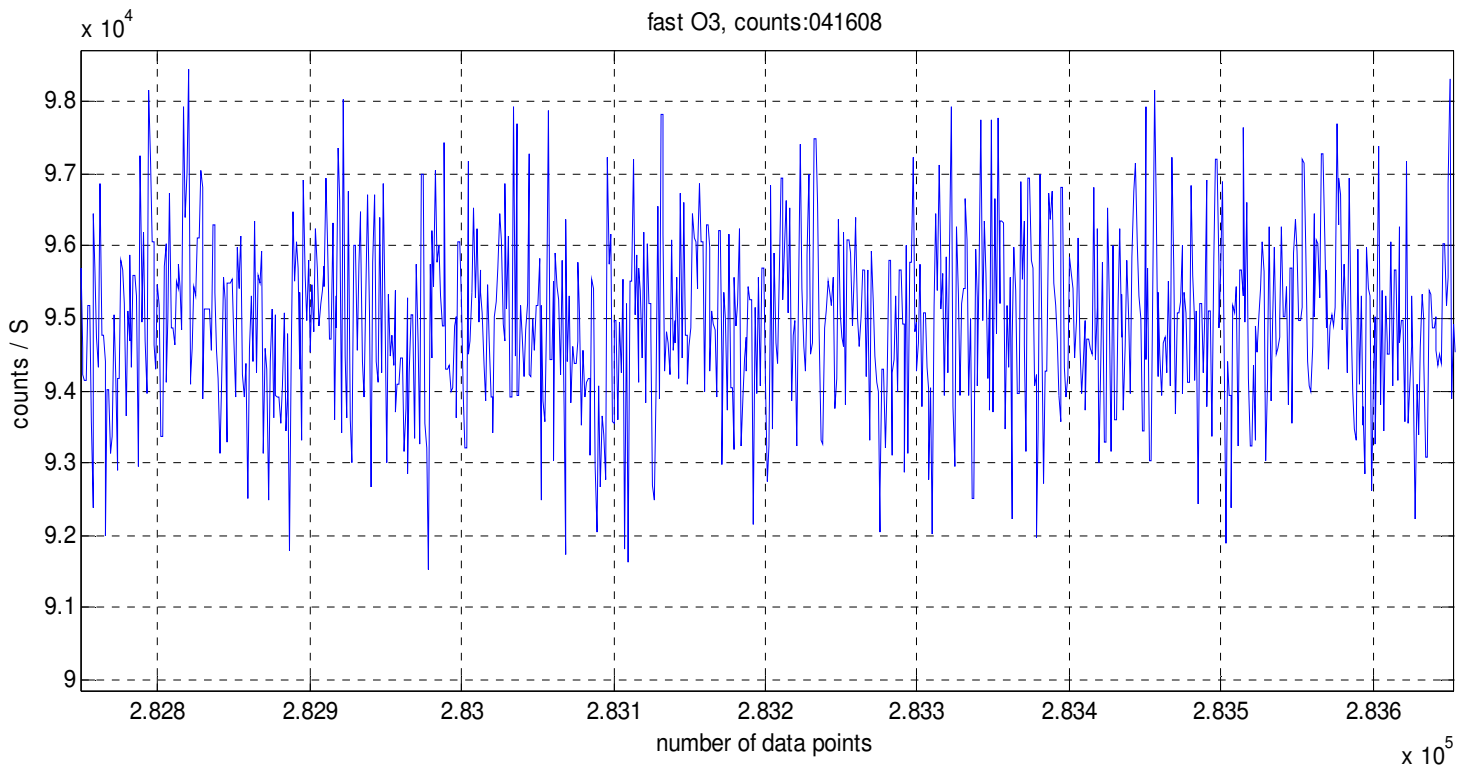
day 10812, insertion of a constant O3 concentration ~ 20ppb



day 108 hour 21 to 23, very high ambient ozone concentration ~ 100 ppb



day 109 hour 0 to 10, ozone dropped in the first two hours to almost zero
line pressure dropped to below 400 Torr since filter got clogged.



Ozone signal during a calibration of day 107: When you look closer you see that the signal is overlapped with a signal that is in the 0.1 Hz range.

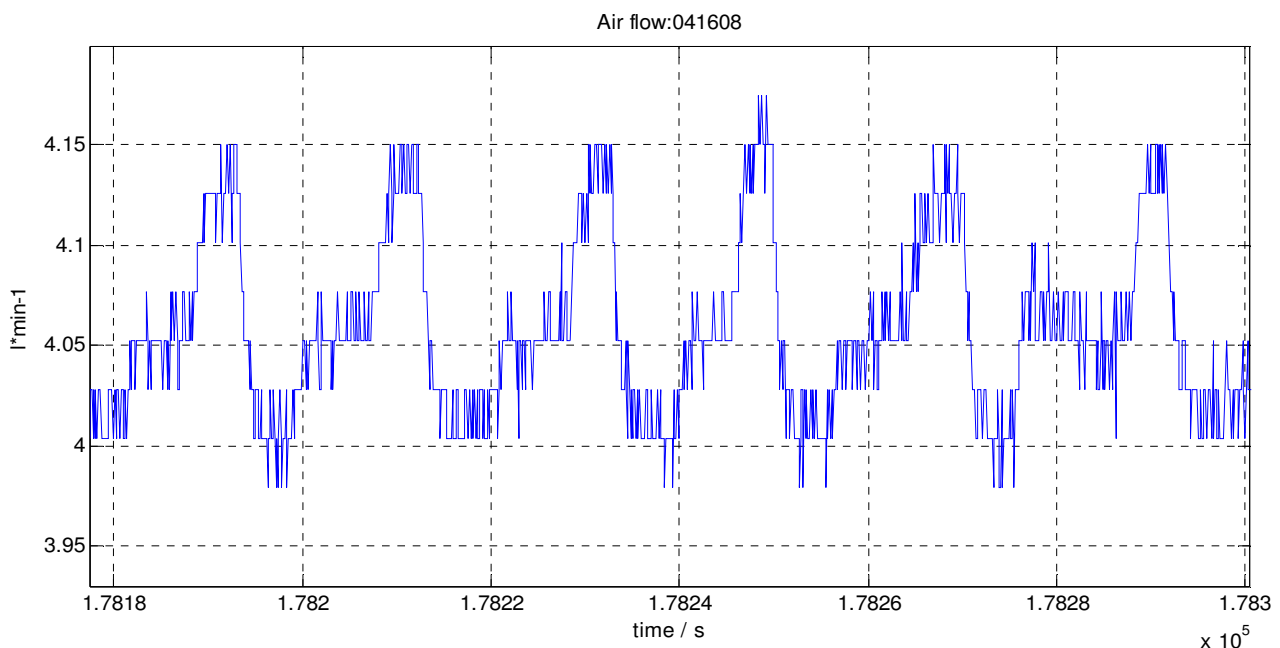
In the above power spectra we could see the peak at 0.1 Hz. So the motion has nothing to do with this. Still, the MFC are an option

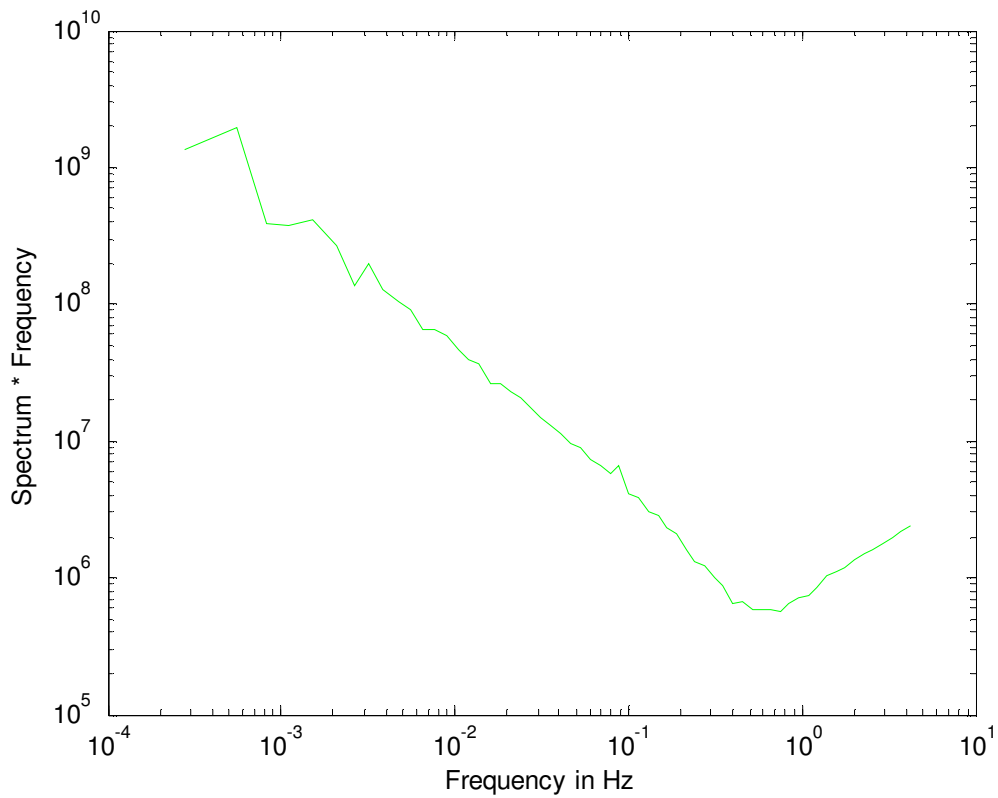
Flow rates:

The NO looks pretty constant, there is an irregular fluctuation of about ± 0.01 ml pm, it's actually even a bit smaller.

The sample flow has an irregular fluctuation of about 0.006 lpm.

The fluctuation of the purge line MFC on the other hand has a regular fluctuation (see figure below) which seems to be in the 20 s range. I observed fluctuations of the purge line flow of up to ± 0.5 lpm





Power spectrum of 10614, second part of a calibration

So our peak could eventually come from the MFC or the purge pump. For the calibration it would make sense since we insert ozone and this would lead to a slight difference in mixing and concentration. For sampling ambient air I'm not sure. Another option would be that this peak is caused by an electronically signal.