The answers to the comments of the third reviewer:

1/ The discussion is focused on differences in aerosol parameters at the two sites. As an example, Table 1 shows many individual differences. I would expect that readers may be interested in the parameters themselves. I recommend to mention at least the values of AOT and the Angstrom exponent, and leave some other parameters in Table 1, for example mean absolute difference and confidence level, in order to keep the Table readable.

We added the information on absolute values in Table 1. We have also mentioned them very shortly in the text with the reference to the paper (Chubarova, 2009) with the detailed AOT climatology.

Table 1. Mean values of aerosol parameters in Moscow and the statistics of the differences $dP=P_{Moscow}-P_{Zvenigorod}$ between Moscow and Zvenigorod main aerosol parameters in different seasons. 2006-2009 period. Dataset 1.

characteristics	season	AOT 1020	AOT 870	AOT 675	AOT 500	AOT 440	AOT 380	AOT 340	Water content, cm	Angstr. exponent 440-870nm	Angstr. exponent 500-870nm
Moscow, mean	total	0.08	0.09	0.12	0.19	0.23	0.28	0.32	1.48	1.45	1.39
dP_{mean}	total	0.01	0.01	0.01	0.02	0.03	0.03	0.03	-0.01	0.01	-0.04
dP_{mean}/P_{Moscow}, %	total	15.8%	10.3%	10.6%	10.7%	13.0%	11.1%	9.1%	-0.3%	0.4%	-2.6%
dP standard deviation,	total	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.12	0.25	0.31
dP confidence level at 95%	total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02
case number	total	1208	1208	1208	1208	1208	1141	1141	1208	1208	1208
Moscow, mean	winter	0.05	0.06	0.07	0.13	0.16	0.19	0.21	0.28	1.55	1.47
dP_{mean}	winter	0.01	0.02	0.01	0.03	0.05	0.02	0.02	0.03	0.04	-0.07
dP_{mean}/P_{Moscow}, %	winter	14.6%	28.8%	18.5%	25.8%	29.2%	12.0%	8.0%	10.3%	2.8%	-5.0%
dP standard deviation,	winter	0.02	0.03	0.03	0.05	0.05	0.04	0.04	0.04	0.25	0.29
dP confidence level at 95%	winter	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.05	0.06
case number	winter	89	89	89	89	89	22	22	89	89	89

Moscow, mean	spring	0.09	0.11	0.13	0.20	0.25	0.29	0.33	1.16	1.27	1.19
dP_{mean}	spring	0.01	0.01	0.01	0.02	0.03	0.03	0.03	-0.01	-0.05	-0.12
dP_{mean}/P_{Moscow}, %	spring	12.1%	10.6%	9.8%	9.2%	12.6%	11.5%	9.3%	-1.3%	-4.2%	-10.0%
dP standard deviation,	spring	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.11	0.22	0.28
dP confidence level at 95%	spring	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.03
case number	spring	377	377	377	377	377	377	377	377	377	377
Moscow mean	summer	0.07	0.08	0.11	0.18	0.22	0.28	0.32	1.88	1.53	1.48
dP_{mean}	summer	0.01	0.01	0.01	0.02	0.03	0.03	0.03	-0.01	0.05	0.03
dP_{mean}/P_{Moscow}, %	summer	20.6%	7.9%	10.6%	10.6%	12.4%	10.9%	8.5%	-0.6%	3.3%	2.1%
dP standard deviation,	summer	0.02	0.02	0.04	0.06	0.07	0.08	0.09	0.14	0.24	0.32
dP confidence level at 95%	summer	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.03
case number	summer	525	525	525	525	525	525	525	525	525	525
Moscow, mean	fall	0.08	0.09	0.13	0.22	0.26	0.32	0.36	1.54	1.54	1.51
dP_{mean}	fall	0.01	0.01	0.01	0.02	0.03	0.03	0.03	0.01	-0.01	-0.04
dP_{mean}/P_{Moscow}, %	fall	13.7%	9.6%	10.2%	9.5%	10.9%	9.9%	9.1%	0.9%	-0.9%	-2.9%
dP standard deviation,	fall	0.03	0.03	0.04	0.05	0.06	0.07	0.08	0.12	0.27	0.32
dP confidence level at 95%	fall	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.04	0.04
case number	fall	217	217	217	217	217	217	217	217	217	217

2/

Page 5470, line 16: replace ‘ in more’ by ‘ in a higher’

changed as “in a larger”

Page 5471, line 15: replace twice as higher’ by ‘twice as high’

changed as was proposed

Page 5473, line 22: If the observations at both sites have been paired, how can the difference between them have been underestimated by different numbers of observations?

This part of the text has been modified.

The modified text is as follows:
.. In addition, the data were hourly averaged that makes the dataset more uniform and comparable with the other AERONET retrieval results, which have one hour resolution. As a result, this dataset (Dataset 1) contains the pairs of quasi-simultaneous measurements at the Moscow and Zvenigorod sites. Total number of the hourly averaged cases is about 1200. In order to examine the quality of the Dataset 1 we compared the monthly mean differences in AOT taken from this dataset with the differences in AOT taken directly from the AERONET website for Moscow and Zvenigorod sites. Fig. 1 presents the comparison between the AOT differences obtained by the two methods: the standard AERONET method (marked as the M1 method) and the more accurate approach, which has been described above (marked as the M2 method).

One can see that the more accurate second approach (M2) provides the absence of negative monthly mean AOT differences compared with the results of the M1 method. These negative AOT differences correspond to the situations, when Moscow AOT's are smaller than those in Zvenigorod. This is more reasonable, since Moscow should provide some additional emission of aerosol particles. Overall, the application of the more accurate method provides the difference of ± 0.05 with the standard approach for monthly mean AOT values.

Page 5473, line 26: Measured photometer data were flagged and not used, if more than half of the sky was cloud covered. The location of clouds is not given in conventional cloud observations, so they could have even blocked the sun. In those cases, the CIMEL cloud screening algorithm would have probably detected them, maybe except thin clouds. But with clouds covering up to half of the sky, is there not a chance that the photometer measurements may still have been affected?

The task is divided into two parts: cloud direct sun (sun measurements) and diffuse (sky measurements) monitoring. Each of the types has their own standard algorithm for filtering – so-called Smirnov and Dubovik algorithms (they are described on the web page and in the paper Smirnov et al., (2000)). Dubovik algorithm used a special test comparing the symmetry of the measurements of the initial almucantar measurements. These measurements can be made even at small cloud amount conditions if you have the cloud cover with the gaps for almucantar points.
That is why quite thick low layer cloudiness usually can be easily flagged. So the contaminated effects can appear only from thin uniform cloudiness. Our additional filter on half of the sky Na<5 works mainly against the effects of uniform thin cirrus cloudiness. We excluded the cases with the large amount of cirrus thin cloudiness, which typically have uniform character. If the amount of cirrus clouds is less than 5, the probability of their uniform character is very low and, hence the standard symmetry Dubovik algorithm will work perfectly. For direct sun measurements we exclude ONLY overcast conditions. We discussed this filtering procedure in (Uliumdzhieva et al., 2005)

The modified text:

.. The analysis of the differences in the retrieved aerosol parameters was made on the base of the Dataset 2. In addition to the standard quality control criteria described in (Dubovik et al., 2000)

the cloud filter with NA<5 (where NA is a total cloud amount, in tenth) has been applied to avoid the cloud contamination mainly by uniform thin cirrus clouds..

Page 5475, line 2 and Fig. 3: The legend for the symbols is missing in the Figure. The lowest curve is probably the NO2 absorption. It must be mentioned in the Figure caption what the three other curves mean.

Changed. Thanks!

Page 5476, line 16: replace Fig. 5 by Fig. 4

Changed.

Page 5477, line 29: remove one 'the'

Changed.

Page 5478, line 3: 'revealed'

Changed.

Page 5478, line 14: 'this is a quite typical situation'

Changed.

Page 5479, line 11: ' : : :if a possible lower single scattering albedo for Moscow is taken into account, ..'

Changed.

Page 5481, line 2 and 3: ' .. we obtained an increase in the occurrence : : :'

Changed.

Page 5481, line 19: ' 3 times'

Changed.

Page 5482, line 17: 'long term' should better be replaced by another wording, since you used less than 3 years of data

Changed.

Page 5482, line 24: ' 3 times'

Changed.

The English language of the text should be revised and corrected for misprints in addition to the ones mentioned above.

We tried to catch all possible misprints in the text.

We would like to thank the reviewer for the useful comments