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CO atmospheric pollution of Moscow area during wild fires in summer 2010, estimates of emissions and their uncertainties

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The results of ground-based spectroscopic measurements of CO total content (TC) over Moscow and Zvenigorod (53 km West from Moscow site) during fires period of 2010 year are presented in comparing with satellite TC data (sounders MOPITT, AIRS, IASI). The extremely high values of CO TC and surface concentration were fixed. Space-time distribution of forest and peat fires was studied by the MODIS data of Aqua and Terra satellites. The CO emissions of fires were estimated with using of different methods and data bases. The main emission uncertainties in descending order are: the distinctions in emission calculation methods, the differences in vegetation maps, the differences of MODIS data from the satellites Terra and Aqua, and an insufficient registration of forest structure dynamics. In addition we bring the top-down emission estimates obtained by independent method with using of orbital and ground-based spectroscopic measurements of CO total content only