

QOS2016-4-1, 2016

Quadrennial Ozone Symposium of the International Ozone Commission

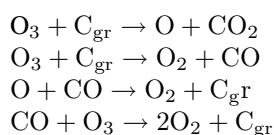
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A New Approach To Mechanism Of The Formation Of Ozone Hole In Atmosphere Of Earth

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A thermodynamic analysis of the reactions of ozone depletion in the atmosphere in temperature range 100–700 K was performed. The equilibrium constants of a large number of possible reactions was calculated. The Chapman's mechanism of ozone depletion was analyzed. A low probability of nitrogen and hydrogen cycles of O₃ depletion was established. It is suggested on radical-chain mechanism of destruction of O₃ molecules by combustion products with the simultaneous formation of atomic oxygen O, and sooty particles. On the base of experimental data of aerosol formation of sooty particles of different diameters and other products of combustion during fires in the Moscow region in the summer of 2010 were made the calculations of formation of the ozone hole in the atmosphere. It is suggested that a possible reason of the formation and growth of the ozone hole in the Southern Hemisphere could be enormous fires, including in February, 1983 that covered large areas of the southern states of Australia, as well as the vast fires in Indonesia 1982-1983 years. It is corrected considerably the chlorine cycle of ozone depletion. A new variant of the mechanism of process – the carbon cycle of ozone destruction was proposed [1]:



It was suggested that the ozone hole in the Northern Hemisphere could be caused by fires (including multiple processes of hydrocarbons combustion) in the eastern regions of Russia, as well as in Europe and the Northern America.

1. Oshchapovsky V.V. Fires Explosion Safety, 2014 V.23, No. 11 p.68-76. (In Russian).