



ON RECOVERY of the OZONE LAYER in the NORTHERN HEMISPHERE in the 21st CENTURY

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Time recovery of the ozone layer in the latitudinal zones of 0° - 85° N, 0° - 30° N, 30° - 60° N and 60° - 85° N in the 21st century has been evaluated. Evaluations have been made using an interactive chemical dynamical radiative two-dimensional (2-D) model of the middle atmosphere Socrates (height 0-120 km). As initial data for calculations for the first time the greenhouse gas concentration scenarios of Intergovernmental Panel on Climate Change (IPCC) RCP 4.5 and RCP 6.0 have been used. According to the scenario RCP 4.5 a stabilization of the radiative forcing must occur before the end of the twenty-first century, and according to the scenario RCP 6.0 - in the 22nd century. It has been shown that under both scenarios, the recovery of the ozone layer in the northern hemisphere (0° - 85° N) can take place in 2035, and in zones of 0° - 30° N, 30° - 60° N and 60° - 85° N does in 2020, 2030 and 2035, respectively. It has been also shown that after recovery the ozone layer will continue to grow and by the end of the 21st century will reach the stationary level exceeding undisturbed level of 1960 at 2.7% (scenario RCP 4.5) and 3.6% (scenario RCP 6.0) in zone 0° - 85° N. It seems to be not smaller ecological threat than depletion of the ozone layer at the end of the twentieth century. The results obtained are in good agreement with the known literary data (see, for example, Table 3-3 in "Scientific Assessment of Ozone Depletion: 2010"), indicating that the model Socrates and "concentration" scenarios of IPCC can successfully be used for such calculations.