# DISSIPATION OF THE PRIMORDIAL TERRESTRIAL ATMOSPHERE DUE TO IRRADIATION OF SOLAR EUV

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When the Earth had grown to the present mass through accretion of the planetesimals in the solar nebula, the Earth was surrounded by a dense primordial atmosphere which was mainly composed of hydrogen and helium (Hayashi et al. 1979). Mass of the atmosphere was about $1 \times 10^{26}$ g. We investigate the dissipation of this atmosphere due to the irradiation of solar EUV. The effect of solar wind is neglected. We assume that the flow of the escaping gas is spherically symmetric and steady. We impose the boundary condition that the flow velocity go through a sonic point. The results show that the primordial atmosphere is dissipated within a period of $5 \times 10^8$ yrs, which is the upper limit imposed from the theory of the origin of the present terrestrial atmosphere (Hamano and Ozima 1978), as far as the solar EUV flux is more than two hundred times as large as the present one. In this case, the rare gases contained in the promordial atmosphere are also dissipated owing to the drag effect (Sekiya et al. 1980).

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