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The ion distribution and intrinsic magnetic field of the Mars

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A model is developed to study the distribution of ions originating from the Martian ionosphere and the influence of Martian intrinsic moment on the distribution. It is discovered that the moment has an influence on O^+ ion flux distribution along the field lines, and the stronger the intrinsic moment, the lower the flux will be in the magnetotail. According to the observed data on the ion flux which is about $7.6\times10^6\,cm^{-2}s^{-1}$ in the Martian magnetotail, the deduced Martian moment is about $2 \times 10^{21}\,G \cdot cm^3$. This is well consistent with the most recent observation obtained by the MGS spacecraft.