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# Early Earth Atmosphere under the Young Sun

F. Tian
Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, CO 80309, USA
(feng.tian@colorado.edu)

**Abstract**

Early Earth was exposed to high levels of EUV radiation from the young Sun [1], which could have triggered expansion of its upper atmosphere and thus facilitated fast atmosphere escape of major atmospheric gases [2, 3]. Rapid loss of major atmospheric gases drives bulk outflow in the upper atmosphere which effectively controls the energy budget – the planetary upper atmosphere in the hydrodynamic regime [2, 3]. The critical EUV level, beyond which the upper atmosphere enters the hydrodynamic regime, depends on the composition of early Earth atmosphere. In this talk we will explore the hydrodynamic upper atmosphere of early Earth under the influence of the young Sun, and attempt to draw comparisons between the atmosphere of the Earth and those of other solar system bodies during their early evolutionary stages.

**References**

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