Study Nuclear Winter with a radiative-convective climate model

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Abstract

1 Introduction

2 Methods

The definition of wavenumber $\nu = \frac{1}{\lambda}$ is used in this work, where λ is the wavelenght.

2.1 Longwave radiation

At wavelengths $\lambda \geq 4\,\mu m$, solar radiation has lower intensities than radiation emitted by Earth's surface and atmosphere at the same wavelengths. Moreover, it presents negligible scattering in atmosphere with respect to absorption. For these reasons longwave radiation is considered to be emitted only by Earth's surface and atmosphere.[1, p. 468]

2.2 Shortwave radiation

At wavelengths $\lambda < 4\,\mu m$, solar radiation has much greater intensity than radiation emitted from Earth's surface and atmosphere. Both scattering and absorption by gases, aerosols and clouds of atmosphere dissipates solar radiation.[1, p. 469]

2.3 Numerical approach

3 Results

4 Discussion

A Source code

In this section the C++ code used to obtain the results presented in this work is shown and commented.

A.1 Classes

References

[1] V. Ramanathan and J. A. Coakley Jr., "Climate modeling through radiative-convective models," *Reviews of Geophysics*, vol. 16, no. 4, pp. 465–489, 1978. DOI: https://doi.org/10.1029/RG016i004p00465. eprint: https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/RG016i004p00465. [Online]. Available: https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/RG016i004p00465.