太陽彩層ジェットの輻射磁気流体シミュレーション
Radiation Magnetohydrodynamic Simulations of Solar Chromospheric Jets

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In the solar chromosphere, which is a thin layer between the visible surface and the hot corona, we commonly observe various jet phenomena such as spicules. Because of a larger density of the plasma, the energy loss in the chromosphere is much stronger than the corona. Quantitative understanding of chromospheric jets is important not only for understanding of the chromospheric phenomena themselves but also for the energy transport into the corona and the solar wind.
In this presentation, we will show our recent results of the numerical simulations by our radiation magnetohydrodynamic code for the comprehensive modeling of the solar atmosphere. The code contains the gravity, the radiative cooling, the thermal conduction, and the thermodynamic effect of partial ionization. The numerical domain includes the convective unstable layer that drives the motion in the simulated chromosphere. Many chromospheric jets with the maximum height greater than 6 Mm are reproduced in the simulations. The typical formation process and the statistical behavior of simulated jets are investigated. We will discuss the comparison between the two-dimensional and three-dimensional simulations and the relation to the observational signatures.

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