

M26b

Multi-height Dopplergrams made from SDO/HMI filtergrams

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We show here that we can obtain multi-height Dopplergrams from full-disk continuous SDO/HMI observation. Multi-height velocity field information in the solar atmosphere is of great interest for many purposes. In recent helioseismology analyses, multi-height observation data are used, for example, to detect flows in the atmosphere or to measure oscillation power distribution around active regions. Multi-height information is useful also in the study of energy transport in the solar atmosphere.

We created two Dopplergrams other than the standard HMI-algorithm Dopplergrams from HMI filtergrams: a line-center Dopplergram and an average-wing Dopplergram. By exploiting the synthetic filtergrams created from realistic convection simulations we estimate the effective height of these Dopplergrams. Compared to the effective height of the standard HMI-algorithm Dopplergram, the line-center Dopplergram is 30 – 40 km above, while the average-wing Dopplergram is 30 – 40 km below.