Contributed Talk

Splinter HiRes

Image restoration of solar slit spectra

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Image restoration has become an indispensable post-facto tool for removing residual image distortions and degradation in solar image data, necessary to reach the diffraction limit of current solar telescopes, even if the data are corrected in real time by state-of-the-art adaptive optics systems. These methods do not work very well on spectrograph data, due to the lack of image information in such data in the direction perpendicular to the slit. With the latest generation of fast, low-noise detectors, this problem can now be addressed by using images recorded strictly simultaneously with the spectral data, and using the PSF of each exposure, obtained during the image restoration of these data, to map the spectral data back to their undegraded state. The restored spectra have a spatial resolution that is close to the diffraction limit of the telescope.