

Mardi 19 mars 2019 à 11h30 (IAS, bâtiment 121, salle 1-2-3)

Recovering thermodynamics from spectral profiles observed by IRIS using machine and deep learning techniques

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We present three novel methods to recover the physical information from spectral profiles suitable to be inverted from an iterative solution of the radiative transfer equation. We combine the meaningful results provided by these traditional methods with machine and deep learning techniques to obtain similar-quality results in an easy-to-use, faster way. We have applied these new methods to Mg II h&k lines observed by IRIS. As a result, we are able to obtain the thermodynamics in the chromosphere and high photosphere in a few CPU-minutes, speeding up the process in a factor of 10^5 - 10^6 . The open-source code developed to this aim will allow the community to use IRIS observations to open a new window to a host of solar phenomena.