Ultraviolet photons from young, hot stars play an important role in controlling the structure and emission spectra of the interstellar medium. The most obvious expressions of this influence are H II regions, the ionized gas surrounding massive star-forming regions. The sharp edges of H II regions mark the limit of influence of H-ionizing but far-ultraviolet (FUV) photons (6 eV < h\(\nu\) < 13.6 eV) play important roles in the chemistry, heating, and ionization balance of photodissociation regions (PDRs) that lie beyond the H II regions.

As part of the Web Infrared Tool Shed (WITS; http://dustem.astro.umd.edu) we have developed a web tool, called the PDR Toolbox, that allows users to determine the physical parameters of a PDR from a set of spectral line observations. Typical observations of both Galactic and extragalactic PDRs come from ground-based millimeter and submillimeter telescopes such as CARMA or the CSO, or space-based telescopes such as Spitzer, ISO, SOFIA, and Herschel. Given a set of observations of spectral line intensities, the PDR Toolbox will compute best-fit FUV incident intensity and cloud density based on our published models of PDR emission.

The PDR Toolbox is available at http://dustem.astro.umd.edu/pdrt/