

## **Are solar wind models constrained by transition region radiation?**

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The coronal pressure and solar wind mass flux are determined by the energy balance of the transition region. The properties of the solar transition region are constrained by observed fluxes and profiles of spectral lines originating in that region. In particular the Lyman alpha emission, which is the strongest line by far in that region, places strong constraints on the pressure in the transition region.

In the past semi-empirical models of the chromosphere and transition region have used large numbers of observed spectral lines to place limits on temperature, density and outflow speed. Solar wind models, even the ones that connect the solar wind to the chromosphere, have used observed solar wind parameters as constraints, but have not paid attention to possible constraints placed by observations in the upper chromosphere/transition region.

In the present study we investigate whether solar wind models can be derived that are consistent with the pressure in the transition region as inferred from the strong Lyman alpha emission.