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Changes in chromospheric structure with magnetic field strength

A detailed understanding the structure and dynamics of the chromosphere is important to understand the heating of the solar atmosphere. The local magnetic field couples the turbulent convection zone to the atmosphere and provides the energy flux which heats the atmosphere. The study of the chromosphere is complicated by it's highly dynamic nature, additionally the radiative processes must be treated in NLTE. Utilising the chromospheric extension of the MURaM code we study the chromosphere formed in a set of simulations. The mean vertical magnetic field strength is varied from 5 to 500 Gauss to represent regions from weak fields, such as internetwork and coronal holes, to stronger network fields and plage. We study the dynamics and structure of the chromosphere and investigate the impact on the spectral lines formed in the chromosphere.

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