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Kinetic Aspects of Solar Coronal Heating PADMA SHUKLA, University of Bochum, ROBERT BINGHAM, Rutherford Appleton Laboratory — The solar corona plasma is maintained at temperatures of millions of degrees much hotter than the photosphere, at a temperature of just 6000K. In this paper plasma heating based on kinetic theory of wave particle interactions including kinetic Alfven waves and lower-hybrid drift modes are presented. The corona plasma is collision-less and so must rely on turbulent wave heating models such as lower-hybrid drift models at reconnection sites or kinetic Alfven waves. The transition region at altitudes of about 2000km is an important boundary chromosphere since it separates the collision dominated photosphere/chromosphere and the collisionless corona. The collisionless plasma of the corona is ideal for supporting kinetic wave plasma interactions. Wave particle interactions lead to anisotropic non-maxwellian plasma distribution functions which may be investigated using spectral analysis procedures being developed at the present time.

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