

MAGNETIC WHITE DWARFS IN THE SDSS AND ESTIMATING THE MEAN MASS OF NORMAL DA AND DB WDS

S.O. Kepler¹, Barbara Castanheira², Ingrid Pesoli¹, Viviane Peçanha¹ & S.J. Kleinman³

¹*Instituto de Física da UFRGS, Brazil,* ²*Department of Astronomy, The University of Texas, USA* ³*Gemini Observatory, Hawaii, USA*

Searching the 22876 spectra obtained by the Sloan Digital Sky Survey selected as possible white dwarf stars, we have detected Zeeman splittings in more than 800 stars, and estimated the fields from less than one megagauss up to around fifty megagauss, complementing the detections by Kulebi et al. 2009. These magnetic white dwarf stars cover the whole range of temperature and classes observed. Stars with multiple spectra show the field changes with time. With this new large sample of magnetic WDs, we can now look at their distributions and physical parameters. We excluded the magnetic white dwarfs from our average mass estimate of normal DAs and DBs due to the Zeeman splittings distortions of the line profiles; analysis of the remaining 1129 bright DA white dwarfs results in a mean mass $\langle M \rangle = 0.607 \pm 0.004 M_{\odot}$, while that of our 55 bright DBs is $\langle M \rangle = 0.656 \pm 0.008 M_{\odot}$. These bright stars were selected for their $\langle \text{SNR}_g \rangle \simeq 30$.