

**QUASAR ABSORPTION LINES AND
THE INTERGALACTIC MEDIUM**

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The space between galaxies and clusters is anything but empty, as evidenced by the many absorption lines in the spectra of quasars at cosmological distances. There is a variety of astrophysical phenomena associated with these absorption lines, ranging from barely detectable density fluctuations of neutral hydrogen in the true intergalactic medium to the rich absorption spectra of (proto-)galactic disks.

I will start with a brief introduction into the phenomenology and basic diagnostics of quasar absorption lines, leading to identify some of the most acute current astrophysical problems connected to IGM research. I will then highlight some of the work currently done in our group, which includes the measurement of the transverse proximity effect and the search for the counterparts of damped Lyman alpha absorbers.