

# The Power (and the Perils) of Agnostic Spectral Stacking

Dr. Stephan Frank  
The Ohio State University

We have developed a new method ('agnostic' spectral stacking) to probe populations of weak, but abundant absorbers via a statistical approach. I will highlight the power of this method to reach unprecedented low column densities of intergalactic/circum-galactic absorbers in two different regimes as examples: first, we utilise the largest available high-quality COS dataset towards quasars at redshifts  $z > 0.7$  in order to probe weak NeVIII absorbers. Secondly, we examine 242 150 Lyman  $\alpha$  forest absorbers at redshifts  $2.4 < z < 3.1$  identified in quasar spectra from the Baryon Oscillation Spectroscopic Survey (BOSS) as part of Data Release 9, and derive a very detailed 'composite spectrum of the IGM / CGM'. While stressing the advantages of our method, I will also not shy away from pointing out some of the complications, mainly in the interpretation of the at first glance stunningly detailed composite spectra.

TUESDAY

SEPTEMBER 29

12:30 P.M.

RM 184 NSH