Evidence for Outflows and Infall in Galaxy Halos as Traced by MgII Absorption

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Detection range $D=\text{few}-120$ kpc
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$\phi \equiv \text{Angle between galaxy major axis and quasar projected sightline}$

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- Detection range $D=\text{few-120 kpc}$
88 MgII absorption selected galaxies (EW>0.1A)

35 non-absorbing galaxies (EW<0.1A)

Redshift range: 0.1 < z < 1.0

Projected distance probed: 7< D <120 kpc
The Sample

HST Images

33 Absorbers
Kacprzak et al 2011b
21 Non-Absorbers
Churchill et al 2012

SDSS Images

9 Absorbers
Kacprzak et al 2011a
14 Non-Absorbers
Chen et al 2010
46 Absorbers
Chen et al 2010

$\phi = 25^{+5}_{-9}$
Bimodal Distribution and Galaxy Colors

Blue Galaxies

Red Galaxies

Kacprzak et al. arXiv:1205.0245
Red galaxies and Blue galaxies (D>40 kpc) have similar EW distributions.

Blue galaxies with D<40 kpc have more strong systems.
Conclusions

- 40 degrees
  - Stronger MgII, D< 40 kpc
  - 60 % of MgII systems

- 100 degrees

- 40 degrees
  - Weaker MgII
  - 40 % of MgII