Does A Periodicity Exist in the Redshift Distribution of
Quasars' Lyman-alpha Absorption Lines?

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We have investigated the redshift distribution of the Ly-α
absorption lines in a quite reasonable homogeneous sample
compiled by Murdoch et al.(1986).(1)
First, after corrected the different wavelength coverages of
each quasar' spectrum, we find a significant peak at $Z \sim 2.9$
in the histogram of redshift distribution of Ly-α absorption
lines (Fig.1). Using the Power-Spectrum Analysis, we find a
periodic component at the length of period of 0.2 for the
argument $X=\ln(1+Z)$. The significance of confidence is not
very high, about 83%, but the length of periods is just the
same as we found before in the distribution of emission line
redshifts of quasars (Fang, Chu, et al. 1982)(2).
Moreover, the ratio $R=1+Z_{em}/1+Z_{ab}$ for Ly-α absorption lines
also shows several peaks in its distribution, which is in
good agreement with the prediction if the periodicity exists
in both emission line and absorption line redshifts (3).
In summary, we find some evidence of existence of very large
scale inhomogeneous structure in the space distribution of
primordial hydrogen clouds.

References
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(3).Chu,Y.,Fang,L.Z.,Liu,Y.
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