Conclusions: We clearly detected at least 2 strong absorption features, at variable energies, in different X-ray spectra of the QSO HS 1700+6416. They can be due to highly ionized (Log \(N_H > 3.2\)) nearly Compton thick gas with nearly-relativistic outflowing velocities (\(v_{out} \approx 0.4-0.5c\)), or to absorption edges at energies consistent with mildly ionized Fe at lower velocities. The source may be one of the few known X-ray BAL QSO with strong background flares. The resulting net exposure is only \(\sim 10\) ks for pn and MOS cameras (\(\sim 300\) counts). Despite the bad data quality, an hint of the presence of an absorption feature around \(2\) keV can be seen in the residuals (fig. 12). The \(\Delta C\) is 15.7 and the confidence level is \(\sim 2.5\sigma\). The E_line=8.05 \(\pm\)0.30 keV implies \(v_{out}=0.34c\).

XMM spectrum (2002) The 30 ks XMM observation of 2002 is affected by strong background flares. The resulting net exposure is only \(\sim 10\) ks for pn and MOS cameras (\(\sim 300\) counts). Despite the bad data quality, an hint of the presence of an absorption feature around \(2\) keV can be seen in the residuals (fig. 12). The \(\Delta C\) is 15.7 and the confidence level is \(\sim 2.5\sigma\). The E_line=8.05 \(\pm\)0.30 keV implies \(v_{out}=0.34c\).

Merged Chandra Spectrum (2007) The merged spectrum has \(\sim 1000\) counts above 1 keV, and shows two features at \(-2.2\) and \(-3.2\) keV (fig. 9). The detection for two Gaussian lines, with EW1=0.14 and EW2=-0.50 keV, and \(v_{out}=0.25\pm0.05c\) and 0.55\pm0.08c, has significance of \(-2\sigma\) and \(-3\sigma\), respectively. Fig 10, 11 show the confidence contours for the absorption lines parameters. From the XSTAR model results of column densities \(N_H=3-5x10^{21}\) cm\(^{-2}\), high ionization parameters \((\log \xi=3.2)\) in both cases. In the edge model the two edges have \(E_{edge1}=8.14\pm0.52\) and \(E_{edge2}=11.20\pm0.60\) keV, the latter consistent with a Fe XXVI edge with \(v_{out}=0.18c\).

Abstract We present the detection of broad absorption features in the X-ray spectrum of the quasar HS 1700+6416, indicating either the presence of high velocity out-flowing gas or a huge absorption edge from Fe. HS 1700+6416 is a high-z (z=2.735), high luminosity quasar, classified as a Narrow Absorption Line (NAL) QSO. One broad absorption feature is clearly visible in the 50ks Chandra observation taken in 2000, while two similar features, at different energies, are visible when the 8 contiguous Chandra observations carried out in 2007 are merged together. The XMM-Newton observation taken in 2002, despite strong background flares, shows an hint of such a feature at lower energies.

Merged Chandra Spectrum (2007) The merged spectrum has \(\sim 1000\) counts above 1 keV, and shows two features at \(-2.2\) and \(-3.2\) keV (fig. 9). The detection for two Gaussian lines, with EW1=0.14 and EW2=-0.50 keV, and \(v_{out}=0.25\pm0.05c\) and 0.55\pm0.08c, has significance of \(-2\sigma\) and \(-3\sigma\), respectively. Fig 10, 11 show the confidence contours for the absorption lines parameters. From the XSTAR model results of column densities \(N_H=3-5x10^{21}\) cm\(^{-2}\), high ionization parameters \((\log \xi=3.2)\) in both cases. In the edge model the two edges have \(E_{edge1}=8.14\pm0.52\) and \(E_{edge2}=11.20\pm0.60\) keV, the latter consistent with a Fe XXVI edge with \(v_{out}=0.18c\).