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Calibration issues in $\delta\alpha/\alpha$

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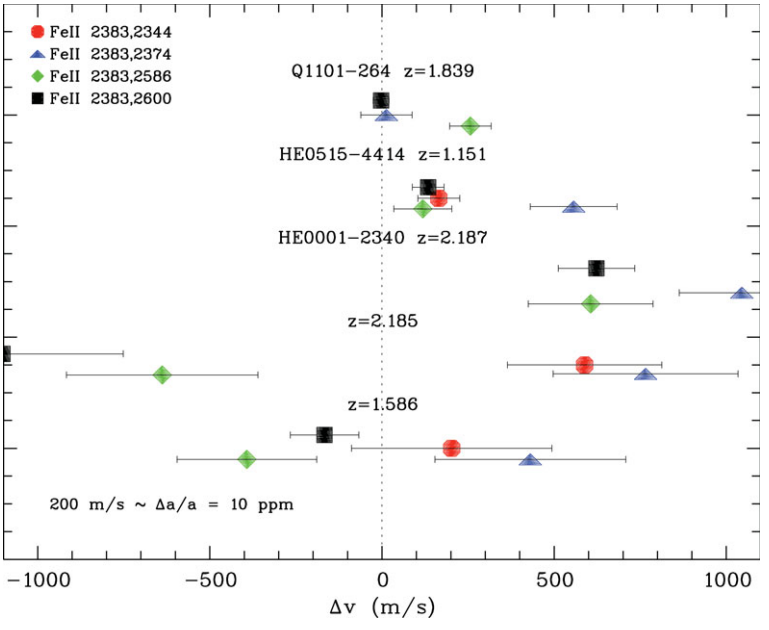
Laser Comb Wavelength calibration shows ThAr one locally unreliable with deviations up to 100 m s^{-1} (or $\delta\alpha/\alpha \approx 7{\cdot}10^{-6}$ for a Fe II-Mg II pair) while delivering an overall 1 m s^{-1} accuracy. Comparison of line shifts of the 5 Fe II lines with identical sensitivity to $\delta\alpha/\alpha$ offers a clean way to test local wavelength calibration errors of whatever origin.



We analyzed 5 absorption systems, towards 3 QSOs. The results are shown in the Fig. Some lines are aligned within 20 m s^{-1}, but others reveal large deviations reaching 200 m s^{-1} or higher (or $\delta\alpha/\alpha \geqslant 10^{-5}$). The origin of these deviations is not clearly identified These results suggest that extreme care is needed before drawing conclusions from $\delta\alpha/\alpha$ analysis based on one or only few lines.