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Title: The Laser Frequency Comb Wavelength Calibrator at HARPS-N
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Abstract: Co-authors:
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We have developed a laser frequency comb (LFC) wavelength calibrator for use at the TNG with HARPS-N and deployed it to the Canary Islands in January of 2013. Our LFC calibrates the spectral range from approximately 5000 Å to 6200 Å with 7000 spectral lines spaced by 16 GHz (approximately 0.16 Å at 5500 Å) each with an accuracy of <10 cm/s. In addition to high wavelength accuracy, the LFC lines also have very narrow widths and high brightness with uniform intensity across the spectrum. These properties enable the detailed study of the spectrograph PSF and high precision, <10 cm/s, wavelength calibration of the spectrograph in a single exposure. We have also used the LFC with HARPS-N to characterize the drift of calibration lines in thorium hollow cathode lamps and white light Fabry-Perot cavities and to observe RV standard stars at high SNR. We plan to continue operating the LFC with HARPS-N to aid in the search for small rocky planets.