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Simple scheme for temperature insensitive laser frequency stabilization[1] LUCAS WILLIS, MICHAEL LIM, Rowan University Department of Physics and Astronomy — We demonstrate two methods to combat differential intensity drifts in modulation-free laser frequency stabilization. The locking signal is derived from the difference between two frequency shifted Doppler-broadened absorption signals from a vapor cell. In one method, a single AOM is used in conjunction with analog divider IC's to normalize the absorption signal amplitudes before generating the dispersion-like signal. The other method uses two AOMs for active intensity correction. A sample of each beam is taken before the vapor cell and a feedback loop stabilizes the intensity by actively attenuating the RF sent to the AOM. We report on frequency stability of both setups.

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