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Making an ultrastable diode laser JAMES ARCHIBALD, MATT WASHBURN, MARSHALL VAN ZIJLL, CHRISTOPHER ERICKSON, BRIAN NEYENHUIS, GREG DOERMANN, DALLIN DURFEE, Brigham Young University — We have constructed a 657nm diode laser with excellent stability for use in an atom interferometer. The laser is a grating-stabilized diode laser is locked to a high-finesse cavity using the Pound-Drever-Hall method. We have measured a linewidth of about 1 kHz and are working on several improvements which should further reduce our linewidth.

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