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Elizabeth T Beazley* (ebeazley@umich.edu), 530 Church Street, 2074 East Hall, Ann Arbor, MI 48109. *Non-emptiness for affine Deligne-Lusztig varieties associated to dominant Weyl chambers.*

Affine Deligne-Lusztig varieties can be thought of as the affine analog of classical Deligne-Lusztig varieties, or Frobenius-twisted analogs of Schubert varieties. We will discuss affine Deligne-Lusztig varieties inside the affine flag variety and survey known results. We then provide a method for proving that non-emptiness holds whenever it is conjectured to do so for affine Deligne-Lusztig varieties associated to alcoves in the dominant Weyl chamber. Our technique involves the work of Geck and Pfeiffer on cuspidal conjugacy classes and elements of minimal length inside their conjugacy classes in finite Weyl groups. (Received February 16, 2010)