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Optimized slow light and beam profiles RITA KALRA, MASON KLEIN, YANHONG XIAO, MICHAEL HOHENSEE, DAVID F. PHILLIPS, RONALD L. WALSWORTH, Harvard-Smithsonian CfA — We will present an overview of Electromagnetically Induced Transparency (EIT) and slow light dependence on transverse laser field profile. Idealized treatments typically assume a uniform optical field profile while experiments are typically performed with gaussian beam profiles. Here we present a comparison of EIT lineshapes measured with flat top and gaussian transverse profiles and compare slow light delays observed under such circumstances with those derived from measured EIT line shapes in simple models. Additionally we study the effects of differential AC Stark shifts due to transverse beam profiles and their effect on light storage.

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