

Abstract Submitted  
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**Rubidium atomic hyperfine filter for amplitude manipulation of femtosecond frequency comb**<sup>1</sup> MARIN PICHLER, Physics Department, Goucher College, Baltimore MD 21204, HRVOJE SKENDEROVIĆ, DAMIR AUMILER, TICIJANA BAN, GORAN PICHLER, Institute of Physics, Zagreb, Croatia HR-10 000 — Femtosecond mode-locked laser pulse train excitation in rubidium  $5\ ^2S_{1/2} \rightarrow 5\ ^2P_{3/2}$  transition is used for direct mapping of the optical frequency comb to rubidium atom velocity comb. The induced comb-like structure in the rubidium ground state hyperfine level populations is monitored by a weak cw scanning probe laser. By introducing an additional rubidium cell, a hyperfine atomic filter is realized which modifies the amplitude of the selected frequency comb lines. The hyperfine optical filter can be a pure isotope  $^{85}\text{Rb}$  or  $^{87}\text{Rb}$  cell, in which case only that isotope will affect the optical frequency comb.

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