

Abstract Submitted  
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**Low-loss nonlinear polaritonics**<sup>1</sup> BARRY SANDERS, University of Calgary, SERGEY MOISEEV, Kazan Physical-Technical Institute, Russian Academy of Sciences, ALI KAMLI, King Khalid University — We propose large low-loss cross-phase modulation between two coupled surface polaritons propagating through a double electromagnetically-induced transparency medium situated close to a negative-index metamaterial. A mutual  $\pi$  phase shift is attainable between the two pulses at the single photon level.

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