

Abstract Submitted
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The EIT- and N- joint resonance lineshape asymmetry MICHAEL CRESCIMANNO, Youngstown State University/Physics Dept. , CINDY HANCOX, Mass. General Hospital, MICHAEL HOHENSEE, Harvard-Smithsonian Center for Astrophysics and Harvard University, DAVID PHILLIPS, Harvard-Smithsonian Center for Astrophysics, RON WALSWORTH, Harvard-Smithsonian Center for Astrophysics and Harvard University — The solution of a quantum optics model for the joint EIT- and N- resonance explains the experimentally observed two-photon lineshape asymmetry as arising from interference and AC stark effects. This solution is evaluated for various light field intensities, detunings and couplings associated with experiments performed on the D1 and D2 transition of 87Rb. Because of its contribution to clock instability, lineshape asymmetry remains perhaps the main impediment to improving all-optical time standards based on the joint resonance.

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