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SGC Switching Between Subluminal to Superluminal Propagation in V-Type Atom

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Abstract: For a V-type three-level atomic system with two closely spaced upper levels, we investigate the light pulse propagation properties with only one laser field. Due to spontaneously generated coherence, the group velocity of the light pulse can be changed from subluminal to superluminal. The effects of the field intensity and the two-upper level splitting on the group velocity are also shown. At last, an analytical expression for the group velocity is given in the case of a weak field.

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Key words: spontaneously generated coherence, superluminal, subluminal

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