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**Magnetic field effects on moving one-dimensional laser envelope solitons** POORNAKALA SETHURAMAN — Modulated nonlinear structures are formed in the interaction of an intense laser pulse with a plasma where the light energy is trapped by the density cavity. Extensive investigations have been carried out to understand the physics of these solitons. For a circularly polarized light, the electron motion leads to the generation of intense longitudinal magnetic field due to inverse Faraday effects [Sheng and Meyer-ter-Vehn, Phys. Rev. E 54, 1833 (1996)]. The effect of this magnetic field on the coherent structure is an interesting open problem. For a stationary soliton in a magnetized plasma, the trapped electromagnetic energy becomes higher in comparison to the unmagnetized case [Farina et al., Phys. Rev. E 62, 4146 (2000)]. The present study considers the moving structures in a magnetized plasma using relativistic fluid-Maxwell model. The spectral characteristics as well as the stability would be investigated. The study would help qualitatively understand the role of self generated magnetic field on the stability of coherent structures.

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