Biswas, Anjan; **Sonmezoglu, Abdullah**; **Ekici, Mehmet**; **Kara, Abdul Hamid**; **Alzahrani, Abdullah Kamis**; **Belic, Milivoj R.**

Cubic-quartic optical solitons and conservation laws with Kudryashov's law of refractive index by extended trial function. (English) Zbl 1480.78016

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Summary: This work studies cubic-quartic optical solitons with Kudryashov's law of refractive index. The extended trial function approach reveals solutions to the model in terms of Jacobi's elliptic functions that yields bright and singular optical solitons with limiting values to the modulus of ellipticity. The conservation laws are also presented.

MSC:

78A60 Lasers, masers, optical bistability, nonlinear optics
35C08 Soliton solutions
33E05 Elliptic functions and integrals
35Q60 PDEs in connection with optics and electromagnetic theory

Keywords:

solitons; Kudryashov; conservation

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