

Abstract Submitted  
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**Analytical solutions to the spin-1 Bose-Einstein condensates** SHI-JIE YANG, ZHI-HAI ZHANG, Department of Physics, Beijing Normal University — We present classes of exact stationary solutions for the one-dimensional coupled nonlinear Gross-Pitaevskii equations which describe the  $F = 1$  spinor Bose-Einstein condensates, both with and without the Zeeman splitting. The spin magnetization configurations and the spin currents are investigated. The soliton or the soliton train complexes are naturally produced.

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