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**Dark and grey electromagnetic electron-cyclotron envelope solitons in an electron-positron magnetoplasma** P.K. SHUKLA, Institut für Theoretische Physik IV, Fakultät für Physik und Astronomie, Ruhr-Universität Bochum, D-44780 Bochum, R. BINGHAM, STFC Rutherford Appleton Laboratory, A.D.R. PHELPS, Scottish Universities Physics Alliance (SUPA), Department of Physics, University of Strathclyde, Glasgow G4 0NG, L. STENFLO, Dept. of Physics, Linköping University, SE-58183 Linköping, Sweden — We present an investigation of the amplitude modulation of an external magnetic field-aligned right-hand circularly polarized electromagnetic electron-cyclotron (EMEC) wave in a strongly magnetized electron-positron plasma. It is shown that the dynamics of the modulated EMEC wave packet is governed by a cubic nonlinear Schrödinger equation. The latter reveals that a modulated wave packet can propagate in the form of either a dark or a grey envelope soliton. This result could have relevance to the transport of electromagnetic wave energy over long distances via envelope solitons in the magnetospheres of pulsars and magnetars.

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