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**Electric susceptibility for strongly magnetized QED at finite temperature and density** PAUL SPRINGSTEEN, EFRAIN FERRER, VIVIAN INCERA, ANGEL SANCHEZ, Department of Physics, University of Texas at El Paso — The electric linear-response of strongly magnetized electron-positron plasmas at finite temperature and density is investigated. Calculating the one-loop polarization operator in that strongly magnetized medium, we find the photon effective Debye mass, and from there we find how the medium electric susceptibility changes with temperature and density. We are reporting a singular behavior for the electric susceptibility for values of the chemical potential close to the electron mass. Highly magnetized systems at finite temperature and density are commonly found in astrophysics applications and in heavy-ion collision experiments.

Paul Springsteen
Department of Physics, University of Texas at El Paso

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