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Some analogies between electromagnetism and gravity ROBYN SANDERSON, EDMUND BERTSCHINGER, MIT — The similarity of the Coulomb law in electromagnetism to the Newtonian law of gravitation is well known. By examining the equation of motion (geodesic equation) in an orthonormal basis, we extend this analogy to include gravitomagnetic and tensor effects in the weak-field limit of general relativity, and discuss the possibility of drawing gravitational field lines as a pedagogical aid. We also discuss analogies between the electromagnetic field equations and the general relativistic field equations (the Cartan structure equations and the Einstein equation) as relations between differential forms.

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