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## **Interaction between electromagnetism and gravitation from unified geometric framework**

*Friday, 12 July 2024 17:00 (25 minutes)*

An alternative formulation of classical electromagnetism relying on torsion in metrically flat spacetime in four dimensions is presented. Unification with gravitation is then obtained as a direct consequence of the extension to the more general case of metrically curved spacetime. A propagating equation for the electromagnetic potential is derived and discussed. In the same context, it is also shown that a second kind of photon can be predicted (which could be the so-called “Dark Photon”) and how it can be distinguished from the known photon in presence of gravitation.

**Primary author:** DJEGHLOUL, Nazim (Oran 1 University)

**Presenter:** DJEGHLOUL, Nazim (Oran 1 University)

**Session Classification:** Extended theories of electromagnetism and their impact on laboratory experiments and astrophysical observations

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