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## Scale and Weyl Invariance in Einstein-Cartan gravity

*Thursday 14 July 2022 10:00 (1h 30m)*

I will show how Einstein-Cartan gravity can accommodate both global scale and local scale (Weyl) invariance. To this end, I will present a wide class of models with non-propagating torsion and a nonminimally coupled scalar field. In phenomenological applications the scalar field may be associated with the Higgs boson. For global scale invariance, an additional dynamical field—the dilaton—is needed to make the theory phenomenologically viable. In the case of Weyl symmetry, the dilaton is spurious and the theory reduces to a sub-class of one-field models. Eliminating non-propagating degrees of freedom, I will derive an equivalent theory in the metric formulation of gravity and briefly discuss possible implications for phenomenology.

**Presenter:** Dr KARANANAS, Georgios (Munich University, ASC)