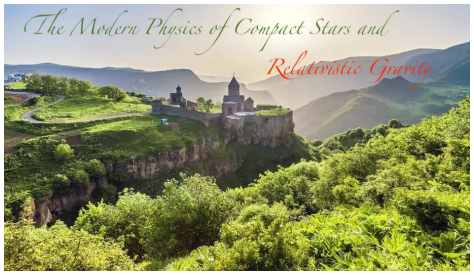

Contribution ID: **4** Type: **not specified**

Scalar-Connection Gravity and Spontaneous Scalarization

Thursday 30 September 2021 12:05 (35 minutes)

Scalar-tensor theories of gravity are known to allow significant deviations from general relativity through various astrophysical phenomena. In this talk, we present scalar-connection gravity; a theory based on scalar fields and connection configurations instead of metric. Since the matter sector is not straightforward to conceive without a metric, we invoke cosmological fluids in terms of their one-form velocity in the volume element of the invariant action. This leads to gravitational equations with a perfect fluid source and a generated metric, which are expected to produce reasonable deviations from general relativity in the strong field regime. As a relevant application, we study a spontaneous scalarization mechanism and show that the Damour-Esposito-Farèse model arises in a certain class of scalar-connection gravity. Furthermore, we investigate a general study in which the present framework becomes distinguishable from the famed scalar-tensor theories.

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