جامعة الكويت
KUWAIT UNIVERSITY

SEMINAR

DEPARTMENT OF PHYSICS

SPEAKER : **Dr. Christian G Boehmer**
Head of Department of Mathematics
University College London (UCL), UK

TITLE : **Modified theories of gravity - a unified approach to metric and metric-affine models**

DATE : **Monday, March 4th, 2024**

TIME : **12:45 P.M.**

PLACE : **Meeting Room , Physics Department**

Abstract

The talk begins with a general overview of General Relativity focussing on the basic ingredients of its mathematical structure. This will naturally lead the way to consider various modifications or extensions of General Relativity, many of which have been studied recently. I will briefly review metric-affine models and how these fit into GR. Next, I will discuss modified gravity models based on generalised geometries and on actions no longer linear in curvature. The main part of the talk will discuss how these many different theories can be studied using a single unified approach which also shows the equivalence of some of these models. We will finish off by showing a cosmological application where torsion drives a period of early-time inflation without affecting the late-time matter dominated behaviour. No matter sources are required to drive inflation and it becomes a purely geometrical effect. (Work in collaboration with Erik Jensko).