1139-53-596   **Gaston Giribet*** (`gg1043@nyu.edu`), Center for Cosmology and Particle Physics, Physics Department, New York University, 726 Broadway av., New York City, NY 10003. *Q-curvature and generalization of Einstein equations.* Preliminary report.

Branson's Q-curvature is an important element in conformal geometry, which finds applications in spectral geometry, in the theory of higher order differential equations, and in theoretical physics. In my talk I will describe how Q-curvature naturally leads to generalizations of Einstein equations -and, consequently, of the notion of Einstein manifolds-. The Einstein-Hilbert variational problem associated to the Q-curvature can be thought of as defining a theory of gravity in space(times) of dimension grater than 4, which incorporates, apart from the Einstein tensor, higher-derivative modifications to the latter. This is closely related to the generalization of the Ricci flat spaces proposed by Lin and Yuan, which is canonically associated to the Q-curvature. I will explain how physics could help to gain intuition about the local meaning of the Q-curvature. (Received February 20, 2018)