

Is General Relativity Pure Mathematics?

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Abstract

In this talk we will discuss the derivations of Einstein and Einstein-Maxwell Field Equations clarifying their inherently unique geometric structure from the point of view of Riemann geometry. This viewpoint combines the original formulation of general relativity by Albert Einstein as well as later (1970s) mathematical clarification of David Lovelock. A connection to quasilinear hyperbolic systems will also be shown which would enable local solvability theorems.