

# Revival of Descartes-Leibniz debate as a guide for a unification theory by removing singularities

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This paper revives the Descartes-Leibniz debate on the constant quantity of motion. This idea is based on keeping the total energy  $E=mc^2$  as a constant where the energy and the mass are independent of the form and speed even when the latter converges to the speed of light. With the increase of the speed, the object transforms the rest energy denoted here as the unexposed energy. The energy transformation process ends when the unexposed energy is completely transformed to an energy with a kinetic character denoted as exposed energy. This is used in the Lagrangian to derive the equations of motion. The exposed energy expresses the intensity of the field and is represented by another inherent characteristic: the energy state. At rest it is associated with the Schwarzschild radius for masses larger than Planck's mass. For smaller masses it is associated with the classical radius. The maximum energy state corresponds to the Planck length. The radii associated with different energy states are found using  $mcr=ah$ . The new model drops the elementary charge, the gravitational constant and unifies gravitation with electromagnetism. It leads to a new gravitation law with quantum character whose applicability limit is up to the Planck length.

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