Quantum theory, gravity, and the standard model of particle physics : using the hints of today to build the final theory of tomorrow

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When a mountaineer is ascending one of the great peaks of the Himalayas she knows that an entirely new vista awaits her at the top, whose ramifications will be known only after she gets there. Her immediate goal though, is to tackle the obstacles on the way up, and reach the summit. In a similar vein, one of the immediate goals of contemporary theoretical physics is to build a quantum, unified description of general relativity and the standard model of particle physics. Once that peak has been reached, a new (yet unknown) vista will open up. In this essay I propose novel approach towards this goal. One must address and resolve a fundamental unsolved problem in the presently known formulation of quantum theory : the unsatisfactory presence of an external classical time in the formulation. Solving this problem takes us to the very edge of theoretical physics as we know it today!

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