Thirteen hypothese on quantizing gravity

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Abstract:

Since the 1930‘s, when at first Goldstein tried to quantize the gravity-field of a light-beam and failed because he got infinities in his solution, the problem of non-renomalization in quantizing gravity occured. In the mean time till today many intelligent tryings are made to quantize gravity in a successful way. Some Supergravity-theories failed also. The most promising tryings nowadays are superstringtheories and loop-gravity but with some strange results. So here are some qualitative thoughts about quantizing gravity. There are then thirteen possibilities (may be more) respectively thirteen commandements.

Key-words:

quantum-gravity,superstrings;loop-theory; groundstate;
oscillation;eigenvalue;eigenfunction;Hawking-equation;Wheeler-de Witt-equation-

1. Introduction:

It is not easy to quantize gravity and until today there are several ansätze for this problem , which isn‘t really solved in satisfaction[1.] .There are various reasons for this. On the one hand, quantum theory is dependent on the background, i.e. if a space-time is specified then quantum physics works there like beeing on a ground surface. The theory of relativity, on the other hand, is background independent because it itself determines the curvature and shape of space-time. Another complicating factor is that quantum field theories only work in a flat Minkowski space and not in a curved space-time, although there are many intelligent tryings since several years to construct QFTH on curved spacetimes on and on. There is also a complete separation of absolute time in quantum physics, while in Einsteins equation space and time are almost equivalent, coupled and relative. This is called the time problem.
. An attempt is made to solve this through an alternative description of time in the form of entanglement.
Then: gravity is a nonlinear force (from 10 coupled differential-equations in a symmtric tensor of grade four), where the pure field can cause the interaction without matter being necessary for this because the field is its own cause-effect.
In short: the classic methods for quantification just don't work for gravity. In mechanics (QM) , electrodynamics (QED) and coredynamics(QCD) you take the classical theories, quantize them by using some operators and something useful comes out of it. If you try the same thing with gravity, infinite terms appear as parts and in sum of a series and it no longer makes sense.

2. Thirteen theses on quantum gravity:

1.Gravity is quantizable by superstring [3.] – or loop-theory and this description doesn‘t mean only special Hawking-Bekenstein-case. Fine and end !

2.Gravity is quantizable but not by superstring/mother-theory or by loop-gravity. Nor by a lattice-theory on Planck-scale with continuable coupling to the word-lines.Any other, but now not known method.

3.Gravity is not quantizable which must be proved.There could be a logical form of FOUR at base, where $A\wedge\neg A\neq 0$ which means A: gravity-quantizing and $\neg A$ „non-gravity-quantizing" are compatible in some form of description .[2.]. Is this a surrender?

4.Gravity is already quantized from the beginning, but this isn‘t seen until today (like the inherent lorentz-invariance of Maxwells-electrodynamics which is immanent in the equations whereby the Newton-mechanics had to be corrected by SRT) because the wrong mathematical description is used.

5. Gravity can only be quantized partial and partial not ,example given: the Ricci-Scalar or the cosmological constant with metric-tensor but not the Ricci-tensor or by using a bi-metric or bi-manifold , where only one metric or manifold is quantized and projects the g-field on the other. (actual example: 5-dimemsional anti-de Sitter-Space with fourdimensional, flat Minkowskispace (3,1) at the edge, where lives a type IIb-Superstring-theory, which projects a gravity-field in the inner of the AdS-Space). But real universe is not an AdS-Spacetime. Nice makulature but it can help. But a micro-, meso-or makroscopic extradimension is needed for this and until now not detected. Fivespaces have a long tradition in GRT since classical Kaluza-Klein-space to include gravity with force of electromagnetics in the 1920s and paper is patient.

6.Spacetime quantization doesn‘t involve the inner symmetries of matter like U(1)xSU(2)x(SU(3), like the pure spin-net loop quantum gravity doesn‘t, because the inner symmetries of space-time describing matter-actions are unnessessary for this quantizing process (see variable coupling constants of the four forces).
Or it does, which means several superstring-theories , where is summed over manifolds and six or seven microdimensions are involved as an analytic continuation of Riemanns zeta-function to -1 and two supersymmetry transformations lead to one coordinate-transformation.[3.].

7. The classical tensor-descriptions after Riemann and Levi-Civita or Ashtekars variables are not useful for quantizing gravity and there must first be build another description (analog example given: like the difference between Schwarzschild- and Kruskal-coordinates in describing black hole- outer and inner structures).

8. The universe is a higher excited state of the searched quantum system, so classical Einstein gravity-equations must come out of describing this state. Quantizing this state by the trying of quantizing Einstein-equations is then like quantizing a higher excited, bounded electron-state in hydrogen-atom, which is already quantized and is a state of special case of its whole quantization process, so it hasn‘t to be quantized again.(The meaning of „second quantizing" has another connection and meaning and is hereby not useful).This could lead to a sort of Hawkings waveequation of the universe, where the current state of universe is only a high excited state like an electron in the say sixth state of a hydrogen-atom. This description then is analogon for Einstein-equation. So its not useful to „quantize" gravity, because the Einstein-equation is only part of a quantized process, where the partial description of state mustn‘t be quantized. In this case Einstein-

gravity is no limit of a quantizing process in steadily spacetime continuum-structure with $\hbar \to 0$ but only a lesser part of the whole quantizing description of a higher state in a whole discrete spectrum, saying an eigenwert or eigenfunction of the whole system. So the whole spectrum has to be discovered from knowing only one eigenwert- or eigenfunction-state.[2.]

9. Gravity is not quantizable with our physical or mathematical knowledge today but basical is.

10. There has to be a new sort of thinking-ansatz in our paradigma-model respectively (analogon-example given : angle-linelements instead of length-lineelements or using double-universe theories may be explaing dark matter phenomenon or transforming curvature into torsion and quantize then or neglecting time (like wick-rotation) or taking curvature only as an statistical arithmetic or geometric mean which is build in truth by overlapping of flat spacetime oscillating-states which are out of phase, which means an overlapping of different QFTHs in several flat, uncurved spacetimes with adding some zeros of them in curvature to get punctual values unequal to zero, where only the interaction of them causes gravity as a mean force like adding some tangential spaces to get a constant sphere-curvature.[2.]

11. Gravity is only quantizable as a description of minimal, finite planck-cubics on world-"lines" respectively field-"lines" which are in reality tubes with variable radius as a function dependent from central-mass radius and their summation to greater variable cubics, because the field is radial like „finite-element-method".

12. There has to be some sort of Wheeler-de Witt-equation to solve the bottom sea of fluctuating spacetime, so it's a sort of topological, may be determinstic quantum chaotic, liquid-equation, describing turbulent states of dynamic spacetimes.

13. Suppose, the universe is not global expanding but local shrinking like a bounded quantum state of an atom, falling into direction of groundstate. The nearer it comes to groundstate, the stronger the force (seen as an accelerated expansion) and so farer away the edge of the transition to continuum of free states. This simulates the observation of seen expansion. In this picture global expansion must come to an abrupt ending in future, when the local universe achieves groundstate, although expanding now accelerated.[2.]

3. Conclusion and summary:

Until today,2023, there are some partial solutions in QG like Hawking-Bekenstein-theorem, which can be derived by both superstring-theories as well as by loop-theory but many fundamental questions in QG are unsolved and until now all problems in formulation are not really cleared.Example given: the superstring-theories are not able to reproduce the inner symmetries U(1)xSU(2)xSU(3) of universe in a clearly correct form.Instead all other symmetries are projected out, so the theories can describe all finite possible other universes in quantum-bubble groundstate but not the single world of fact – until last this description will be found one day.

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