GEOMETRIC APPROACH TO QUANTUM GRAVITY IDEA

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Abstract. I will explore in brief a simple geometry that could unify quantum physics with general relativity.

1. Field equation

I will exam an equation that could be solution to creating a field equation of gravity that has a quantum physics build in it. It has a geometrical meaning behind it, first i will use two objects to create it, rotation matrix in tensor form for each space dimension and proper time tensor that takes n vectors where n is number of space and turns it into a number or it takes a number and turns it into vector. We live as far as we know in four dimension space-time but in this model i will explore five dimension space-time where fourth space dimension is used to explain spin. I can formally write field equation as:

$$R^{\beta_1\beta_2\beta_3\beta_4\beta_5}_{\alpha_1\alpha_2\alpha_3\alpha_4\alpha_5}(\phi)\tau_{\beta_1\beta_2\beta_3\beta_4\beta_5} = \partial_{\beta_1}\partial_{\beta_2}\partial_{\beta_3}\partial_{\beta_4}\partial_{\beta_5}\tau^{\beta_1\beta_2\beta_3\beta_4\beta_5}_{\alpha_1\alpha_2\alpha_3\alpha_4\alpha_5} \tag{1.1}$$

Where R is rotation tensor and τ is proper time tensor. Lets first examine equation geometrical meaning without rotation so equation reduces to:

$$\tau_{\beta_1\beta_2\beta_3\beta_4\beta_5} = \partial_{\beta_1}\partial_{\beta_2}\partial_{\beta_3}\partial_{\beta_4}\partial_{\beta_5}\tau^{\beta_1\beta_2\beta_3\beta_4\beta_5}_{\alpha_1\alpha_2\alpha_3\alpha_4\alpha_5} \tag{1.2}$$

Each index runs form zero to four, on left side i will have tensor that takes five vectors $\beta_1\beta_2\beta_3\beta_4\beta_5$ and turns them into proper time. It has $5^5 = 3125$ components, generally for n dimensions of space-time i have n^n components. On right side of equation i have proper time tensor that takes a five vectors $\alpha_1\alpha_2\alpha_3\alpha_4\alpha_5$ and turns them into proper time then it takes proper time and turns into five vectors $\beta_1\beta_2\beta_3\beta_4\beta_5$. Now i take how those five vectors change with respect to their coordinate and im left with only proper time. I have equality on both side of equation that states that change in five vectors of a proper time is equal to that proper time. It means that change in any five vector that create a tensor field is equal to changing those vectors into proper time. So for example if vector change is big so is it's proper time, if change in vector is small so it's its proper time. Or speaking opposite, change in any five vectors is always same as proper time of those vectors. Now it generates static space-time whee object always follow determined trajectories. It's a classical field. But if i add rotation tensor that comes from rotation matrix of five dimensions space and assume that field can be rotated by some angle in any direction now it becomes a quantum field, object can move in direction and it's all equal state of system. Now vector can point in any direction for four-sphere in flat space-time. Rotation can be in both directions positive and negative angle that should be good enough to explain spin states. When i do measurement i assume that field rotation changes from any rotation direction to one. Spin is rotation in forth space axis with rest three normal space axis.