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Can a sub-quantum medium be provided by General Relativity?

Emergent Quantum Mechanics (EmQM) seeks to construct quantum mechanical theory and behaviour from classical underpinnings. In some formulations of EmQM a bouncer-walker system is used to describe particle behaviour, known as sub-quantum mechanics. This poster explores the possibility that the field of classical general relativity (GR) could be the sub-quantum medium of EmQM. Firstly, I present arguments which show that GR satisfies many of the a priori requirements for a sub-quantum medium. Secondly, some potential obstacles to using GR as the underlying field are noted, for example field strength (isn't gravity a very weak force?) and spin 2.

Thirdly, the ability of dynamical exchange processes in GR with a field scaffolding process to create non spin 2 very strong effective fields is demonstrated through the use of a simple particle model and Birkhoff's theorem, which solves many of the issues raised in the second section.

Fourthly, I continue with the scaffolding process quantifying the frequencies and field intensities that this GR sub quantum medium would work at. I conclude that there appears to be enough evidence to pursue this direction of study further, particularly as this line of research also has the possibility to help unify quantum mechanics and general relativity.

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