I would like to present the talk that summarizes arXiv:1110.2164

One of the key problems of interpretation of quantum mechanics is the interpretation of probability amplitude. The phenomenon of interference suggestes that probability amplitude has physical meaning. But at the same time, it is difficult to fully believe in that statement because probability amplitude lives in configuration space. If for example we had single particle quantum mechanics it would have been easy to view \psi as a “classical field” obeying wave equation. Such can not be said for multiple particles, much less second quantization. However it is possible to construct a “mashine” or “cellular automaton” that would “encode” the mathematical information about probability amplitude of Fock space in terms of quantities living in R^4. This can be done by envoking discretization. On the one hand, Fock space has more information than R^4; on the other hand, finer discretization has more information than grosser discretization. Thus, grossly discretized Fock space has the same amount of information as finely discretized R^4. We then construct a type of hologram in R^4 that would simultaneously illuminate different “pictures” of that hologram, and the intensity of illumination of each picture will be complex valued, and this would give complex valued amplitude that a given picture “takes place”. In order for probability amplitude of a picture to be consistent, the signals need to have superluminal speed. However, their speed can still be finite, as long as the time delay is negligible; that is the universe has finite size and it takes very small, but finite, time for these signals to pass the universe. If such is not the case, we would end up with several quantum field theories across several “large” parts of the universe (perhaps, each domain is a million kilometers each); this of course is also possible since we can't fly far enough to do an experiment that would falsify this.