

Research Plan

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- 1) We paced to research of “a Novel string field theory” with Prof Holger Bech Nielsen with the Help of Y.Sekino.

We plan to work pp wave background and search brane solutions etc.

- 2) In early universe there existed inflation era. However there are more than 120 models.

We would like to classify these and want to show some group such as slow roll inflation that is most popular, is very artificial in the sense that the potential has long flat region. In field theory such potential does not appear.

We, Sekino, Holger Bech Nielsen and myself there may be a kind of no-go theorem.

- 3) It is believed that our universe is created by Big Bang and then with a period of inflation our universe becomes so big.

We concentrate after big bang till inflation the universe is repeatedly creation and destruction and gradually big and go to inflation era. We, with H.Kawai are to clearly formulate such a “cyclic universe theory”

Numerically we obtained such a solution from gravity with matter.