

String Field Theory derivation of non-local cosmology

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GR in its original form needs to be modified to become renormalizable and/or geodesically complete. Local R^2 modification of GR works just fine for renormalizability but the full theory is not unitary. Early Universe cosmology however seems impeccable in the R^2 gravity. Recent studies show that analytic non-localities may render R^2 theory both renormalizable and unitary keeping its amazing fit into the observational data. Such non-localities naturally arise in string field theory (SFT). In what follows I will first give a detailed review of the present state of non-local SFT motivated gravity theories and then will pay special account to the explanation on how the new non-local structures arise in SFT.