Contribution ID: **31**   Type: **not specified**

The Hilbert space and holography of information in de Sitter quantum gravity

Thursday 20 April 2023 14:30 (1 hour)

We obtain all solutions of the Wheeler-DeWitt equation with positive cosmological constant for a closed universe in the large-volume limit. We define a natural norm on the solution space and thereby obtain a description of the Hilbert space of quantum gravity in an asymptotically de Sitter spacetime. This provides the finite G_N generalization of the Hilbert space constructed by Higuchi using group averaging. All the states in this Hilbert space share the symmetries of the Euclidean vacuum. We use this property to generalize the principle of holography of information to de Sitter space: cosmological correlators (defined as appropriately gauge-fixed observables) in an arbitrary small region suffice to completely specify the state.

References:
1) https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Farxiv.org%2Fabs%2F2303.16315&data=05%7C01%7Csa2013%40un
2) https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Farxiv.org%2Fabs%2F2303.16316&data=05%7C01%7Csa2013%40un

Author: RAJU, Suvrat (Tata Institute for Fundamental Research)

Presenter: RAJU, Suvrat (Tata Institute for Fundamental Research)