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Type: **Talk**

Does String Theory have stable de Sitter vacua ?

Thursday 10 September 2020 11:25 (25 minutes)

String Theory is believed to have more than 10^{500} possible compactifications to four dimensions, leading to de Sitter universes whose physics resembles that of our universe. This is often invoked as supporting the “anthropic principle”: our universe is but one of this multitude of universes (multiverse), and the physical parameters we observe in our universe are selected by requiring life to exist. This anthropic reasoning is becoming a more and more popular explanation to the extremely difficult task of explaining the enormous amount of fine-tuning of the cosmological constant and of the electroweak scale.

The 10^{500} de Sitter vacua are constructed in low-energy effective theories that contain ingredients drawn from String Theory, and I will present three String-Theory calculations that show that these ingredients are incompatible. These calculations appear to rule out the KKLT construction of stable de Sitter vacua in String Theory, as well as other similar constructions. They supports the recent swampland conjectures that stable de Sitter vacua in controllable regimes of parameters do not exist in String Theory.

Is this abstract from experiment?

No

Internet talk

Yes

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

No

Details

N/A

Author: BENA, Iosif (CEA-Saclay)

Presenter: BENA, Iosif (CEA-Saclay)

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