#### October 10, 2020

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#### presents

#### Today’s Saturday Morning Physics Speaker

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| **Fred Adams Ta-You Wu Collegiate Professor (Physics)** |

 

***The Degree of Fine-Tuning in
Our Universe – and Others***

 **Abstract**The fundamental constants of nature must fall within a range of values in order for the universe to develop structure and ultimately support life. The relevant parameters include the strengths of the fundamental forces, particle masses, cosmic energy densities, abundances of ordinary matter and dark matter, and the amplitude of primordial density fluctuations. This talk considers current constraints on these quantities and assesses the degree of tuning required for the universe to be viable.

 **Biography**Professor Adams works in the general area of theoretical astrophysics with a focus on the study of star formation and cosmology. He is internationally recognized for his work on the radiative signature of the star formation process, the dynamics of circumstellar disks, and the theory of the initial mass function for forming stars. His recent work includes star formation in clusters, studies of extra-solar planetary systems, and the environmental effects of clusters on planetary systems. In cosmology, he has studied aspects of the inflationary universe, cosmological phase transitions, magnetic monopoles, cosmic rays, the cosmic background radiation, galactic halos of dark matter, and the possible fine-tuning of the universe.

Professor Adams is the new director of the University of Michigan Leinweber Center for Theoretical Physics.

 ***YouTube* Link to Saturday’s Talk:** [**https://www.youtube.com/watch?v=jPs7-svpZW8**](https://www.youtube.com/watch?v=jPs7-svpZW8)

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