IMSA
Consortium Distinguished Lecture Series

Thursday, November 16, 2023
5:30 pm
Ungar 528-B

Join via Zoom:
https://miami.zoom.us/j/96820408318

On some aspects of (cosmological) fine-tuning

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The fine-tuning (FT) of the universe for life is the idea that the constants of nature (parameters of physical models of the universe) must belong to very small intervals for life to exist. However, several criticisms have emerged concerning the probabilistic measurement of such life-permitting intervals. Based on a series of recent developments, I present a Bayesian and maximum entropy framework that addresses several of these concerns. Further, I also present a result that says if tuning is fine or if the level of tuning cannot be assessed for certain families of distributions. Finally, using a recent mathematical theory of learning and knowledge acquisition, I examine whether FT can be learned or if it can only be speculated upon. As a bonus, if time permits, we will also touch on an extension of FT to other areas of science beyond cosmology.

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