Laboratório de Instrumentação e Física Experimental de Partículas

LIP Seminar

Thursday, 23 April, 11h30

Finders, Keepers: Statistical fluctuations, causality, and whatnot in particle physics

Pietro Vischia

(Université Catholique de Louvain - UCL)

Classical hypothesis testing constitutes the backbone upon which scientific results are produced in most fields, but it is now under attack as a facilitator of the so-called reproducibility crisis. Although classical testing has been paramount to the discovery of the Higgs boson and the "five-sigma" threshold is considered more robust than the two-sigma threshold used in other fields, the approach has intrinsic limitations even in particle physics;
I will review the classical approach, comparing it with the Bayesian one, and delve into a few spectacular examples of "flukes" from particle physics.
Finally I will give a few perspectives in view of the latest debates on the topics of severe testing and causality in statistical inference.

Location: Videoconference - Zoom
https://indico.lip.pt/event/704/
Connection details
URL: https://videoconf-colibri.zoom.us/j/99842372416
PIN: 940702

Or by phone:
Dial: +351 211 202 618 (Portugal Toll) or +351 265 120 012 (Portugal Toll)
Meeting ID: 998 4237 2416
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