



Séminaire du Laboratoire de l'Accélérateur Linéaire

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Jour inhabituel

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Estimating the "look elsewhere effect" when searching for a signal

The "look elsewhere effect" refers to a common situation where one searches for a signal in some space of parameters - for example, a resonance search with unknown mass, or a search for astrophysical point sources with unknown location in the sky. Since Wilks' theorem does not apply in such cases, one usually has to resort to computationally expansive Monte-Carlo simulations in order to correctly estimate the significance of a given observation. Recent results from the theory of random fields provide powerful tools which may be used to alleviate this difficulty, in a wide range of applications. The implementation of such methods is discussed for typical problems in high energy physics.

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