



Epistemology

« Beyond the Risk of Error: A Philosophical Approach to Experimental Uncertainties in Particle Physics »

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Experiments in particle physics rely on a complex instrumental and computational chain, which raises epistemological questions about the status of the data produced. In this seminar, I propose an analysis through the notion of *epistemic risks*, meaning the risks induced by the effects of uncertainty on the production of knowledge. I distinguish between *inductive risk*, which is the risk of error when reasoning from data to an empirical conclusion, and other kinds of risks that arise upstream, for example through methodological choices. Based on a case study of top quark physics, I show how these risks interact and shape the empirical robustness of experimental results. This approach highlights the pragmatic and value-laden dimension of scientific practices in particle physics and opens new perspectives for philosophical debates on values in science.



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