

Scientific methodology upon which empirical sciences, including physics, are based, essentially encompasses the framework within which physicists perceive the world and work toward modeling it. Criteria for having acceptable physics models have changed over time since 1900's, however, compatibility with observations/experiment is still largely regarded as the decisive criterion. On the other hand, recent progress in theoretical physics, especially in high energy physics and the notion of multiverse, has revived again the question of the relation between physics models and experiment. In this talk I state that, in my opinion, computability, predictive power, testability and compatibility with experiment/observation are the main four criteria for rejection or acceptance of ideas or models by physics community. I will then specifically discuss these criteria in connection with the notion of having a multiverse which appears in some different areas of modern theoretical physics.