Abstract Submitted
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Changing What Science Is and How It's Done ROBERT JONES — Knowledge is of an approximate character. Our formalisms abstract and simplify. Each formalism is an idealization, often times approximating in its own DIFFERENT ways, each offering somewhat different coverage of the domain. Having MULTIPLE overlaping theories of a knowledge domain is then better than having just one theory (R. Jones, APS Gen. Meeting, March 2008 and refs. therein). In the future each field will possess multiple theories of its domain and scientific work and engineering will be performed based on the ensemble predictions of ALL of these. This idea can be considered an extension of Bohr's notion of complementarity, "...different experimental arrangements...described by different physical concepts...together and only together exhaust the definable information we can obtain about the object." Although finding the "correct" or "most probable" theory has been the goal of scientific investigation in the past we now know that the pluralistic science that I am describing here is more successful (Peter Cheeseman in The Mathematics of Generalization, D. H. Wolpert, Ed, 1995, pg. 315 and Michael Weisberg, J. of Philosophy, 2007, pg. 646). This is not postmodernism. Theories are accepted based upon experimental evidence not human opinion. Over the years I have tried to keep with this new pluralism in both my fusion energy and artificial intelligence work.

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