

# Assessing the Methodology for Finding Lorenz Chaos Attractor

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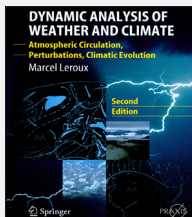
**Abstract:** A first chaos attractor was found in Lorenz's study at the beginning of 1960s. This paper tries to make an analysis on the methods used in his innovation. At first, we briefly reviewed the story of his study and then followed the major events which occurred afterwards and methods used in his study, and finally drew a technology roadmap for his innovation journey. It turns out that his technology road fits the philosophy of general methodology in scientific community, of which simplification or abstraction is the dominant method resulting from reductionism. He started from a question about the predictability of linear regression equation in weather forecasting and then developed a simplified model based on mathematics and physics. The numerical solution of the model shows to be irregular, with which he proved his suspicion. This case also shows the importance of the chanciness in connection with inevitability on dialecticism for the innovation and can be regarded as a classical one for methodology study. The insight of the case is evidently helpful to innovation in atmospheric sciences.

**Key words:** innovation, methodology, Lorenz chaos abstractor, predictability, technology roadmap

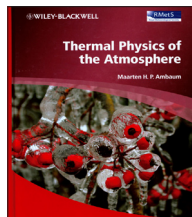
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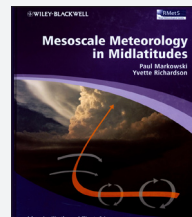
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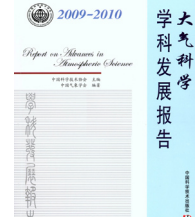
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