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Pricing Weather Derivatives Using Maximum Entropy Principle

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A fundamental question in the study of weather derivatives is how to value them. In this paper, we implement maximum entropy principle in pricing weather derivatives. A time-series approach is used for modeling and forecasting daily average temperature in selected US city. Maximum entropy principle is then applied to derive the risk-neutral distribution of temperature. We illustrate this method by pricing an exchange traded weather option. The robustness of the pricing method is also examined.