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Summary

This article discusses an extension upon the 2000 three dimensional radiosity-graphics combined model, or RGM. Specifically, the authors added onto the existing model to simulate thermal radiation and directional brightness temperature (DBT) variation, effectively broadening its application domain. Using the Windows platform, full optics range is achieved of such thermal radiation information, and the authors see its usage as a way to gain a better understanding of the mechanism of thermal images. Focusing mainly on canopy vegetation and crops, the improved model is able to gather sufficient radiometric and structure information to develop relative conclusions about how the agriculture's temperature distribution affects the DBT. Such conclusions include the model's ability to predict the DBT distribution of row crop during comparison with relative two row crop models.