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Title: Numerical Study of a West African Squall Line Using a Regional Climate Model
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Abstract:
The squall line of 21-22 August 1992, documented during the HAPEX-Sahel campaign, is simulated using the regional atmospheric model (MAR). The simulated results are compared to observational data. The aim of this work is both to test the capacity of this model to reproduce tropical disturbances in West Africa and to use this model as a meteoro-logical one. It allows simulating high moisture content in the lower layers. The MAR simulates well updrafts whereas downward currents are neglected. This result may be due to convective scheme used to parameterize the convection in the model. The forecast of stability indexes used to define violent storms shows that the model is able to reproduce the squall line. Despite some differences with the observational data, the model shows its ability to reproduce major char-acteristics of the mesoscale convective disturbances.
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