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## Evaluation of Eta Weather Forecast Model over Central Africa

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### ABSTRACT

The main goal of this work is to investigate the skills of Eta weather forecast model in forecasting precipitations, temperature and sea level pressure. The model domain extends from 6° W to 29° E and 6° S to 21° N. The model is run with a horizontal resolution of 48 km with 45 vertical levels and initial and boundary conditions were given by National Centers for Environmental Prediction (NCEP) 00UTC operational analysis. All the forecasts are for period of 48 hours. They were compared to the Tropical Rainfall Measuring Mission (TRMM) derived data for precipitations and NCEP/NCAR (National Center for Atmospheric Research) analysis for temperature and sea level pressure. The results show that Eta model predicts fairly good 2 meters temperature and the sea level pressure. Spatial distributions of precipitations are not well simulated by the model.

### KEYWORDS

Precipitations; Temperature; Sea Level Pressure; Eta Model

### Cite this paper

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### References

- [1] K. F. Mkankam and B. C. Mbane, " Analysis of Daily Precipitation Time Series of the Cameroon Meteorological Network," *Science & Technology Development*, Vol. 7, 2000, pp. 77-83.
- [2] E. Rogers, D. G. Deaven and G. J. Dimego, " The Regional Analysis System for the Operational Eta Model: Original 80-km Configuration and Recent Changes," *Weather and Forecasting*, Vol. 10, No. 4, 1995, pp. 810-825. doi:10.1175/1520-0434(1995)010<0810:TRASFT>2.0.CO;2
- [3] T. M. Hamill and S. J. Colucci, " Verification of EtaRSM Short-Range Ensemble Forecasts," *Monthly Weather Review*, Vol. 125, No. 6, 1997, pp. 1312-1327. doi:10.1175/1520-0493(1997)125<1312:VOERSR>2.0.CO;2
- [4] J. S. Kain and J. M. Fritsch, " Convective Parameterization for Mesoscale Model: The Kain-Fritsch Scheme. The Representation of Cumulus Convection in Numerical Models," *Meteorological Monographs*, Vol. 46, 1993, pp. 165-170.
- [5] Z. I. Janjic, " The Step-Mountain Eta Coordinate Model: Further Developments of the Convection, Viscous Sublayer, and Turbulence Closure Schemes," *Monthly Weather Review*, Vol. 122, No. 5, 1994, pp. 927-945. doi:10.1175/1520-0493(1994)122<0927:TSMECM>2.0.CO;2
- [6] T. Black, " The NMC Mesoscale Eta Model: Description and Forecast Examples," *Weather and Forecasting*, Vol. 9, No. 2, 1994, pp. 265-278. doi:10.1175/1520-0434(1994)009<0265:TNNMEM>2.0.CO;2
- [7] S. C. Chou, J. F. B. Fonseca and J. L. Gomes, " Evaluation of Eta Model Seasonal Precipitation Forecasts over South America," *Nonlinear Processes in Geophysics*, Vol. 12, No. 4, 2005, pp. 537-555. doi:10.5194/npg-12-537-2005

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- [8] M. J. Fennessy and J. Shukla, "Seasonal Prediction over North America with a Regional Model Nested in a Global Model," *Journal of Climate*, Vol. 13, No. 14, 2000, pp. 2605-2627. doi:10.1175/1520-0442(2000)013<2605:SPONAW>2.0.CO;2
- [9] F. Mesinger, Z. I. Janjic, S. Nickovic, D. Gavrilov and D. G. Deaven, "The Step-Mountain Coordinate: Model Description and Performance for Cases of Alpine Lee Cyclogenesis and for a Case of an Appalachian Redevelopment," *Monthly Weather Review*, Vol. 116, No. 7, 1988, pp. 1493-1518. doi:10.1175/1520-0493(1988)116<1493:TSMCMD>2.0.CO;2
- [10] F. Mesinger, "A Blocking Technique for Representation of Mountains in Atmospheric Models," *Aviation Meteorological Aeronautics*, Vol. 44, 1984, pp. 195-202.
- [11] G. L. Mellor and T. Yamada, "Development of a Turbulence Closure Model for Geophysical Fluid Problems," *Reviews of Geophysics and Space Physics*, Vol. 20, No. 4, 1974, pp. 851-875. doi:10.1029/RG020i004p00851
- [12] S. B. Fels and M. D. Schwarzkopf, "The Simplified Exchange Approximation: A New Method for Radiative Transfer Calculations," *Journal of the Atmospheric Sciences*, Vol. 32, No. 7, 1975, pp. 1475-1488. doi:10.1175/1520-0469(1975)032<1475:TSEAN>2.0.CO;2
- [13] A. A. Lacis and J. E. Hansen, "A Parametrization of the Absorption Dissipation in the Atmosphere from LargeScale Balance Requirements," *Monthly Weather Review*, Vol. 49, 1975, pp. 608-627.
- [14] W. A. J. Gallus and M. Segal, "Does Increased Predicted Warm Season Rainfall Indicate Enhanced Likelihood of Rain Occurrence?" *Weather and Forecasting*, Vol. 19, No. 6, 2004, pp. 1127-1135. doi:10.1175/820.1
- [15] S. E. Nicholson, B. Some, J. McCollum, E. Nelkin, D. Klotter, Y. Berte, B. M. Diallo, I. Gaye, G. Kpabebe,