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Evaluating Error Propagation in Coupled Land–Atmosphere Models

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Received 15 September 2010; accepted 30 July 2011

ABSTRACT: This study examines how land-use errors from the Land Transformation Model (LTM) propagate through to climate as simulated by the Regional Atmospheric Model System (RAMS). The authors conducted five simulations of regional climate over East Africa: one using observed land cover/land use (LULC) and four utilizing LTM-derived LULC. The study examined how quantifiable errors generated by the LTM impact typical land–climate variables: precipitation, land surface temperature, air temperature, soil moisture, and latent heat flux. Error propagation was not evident when domain averages for the land–climate variables of the yearlong simulation were examined.

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