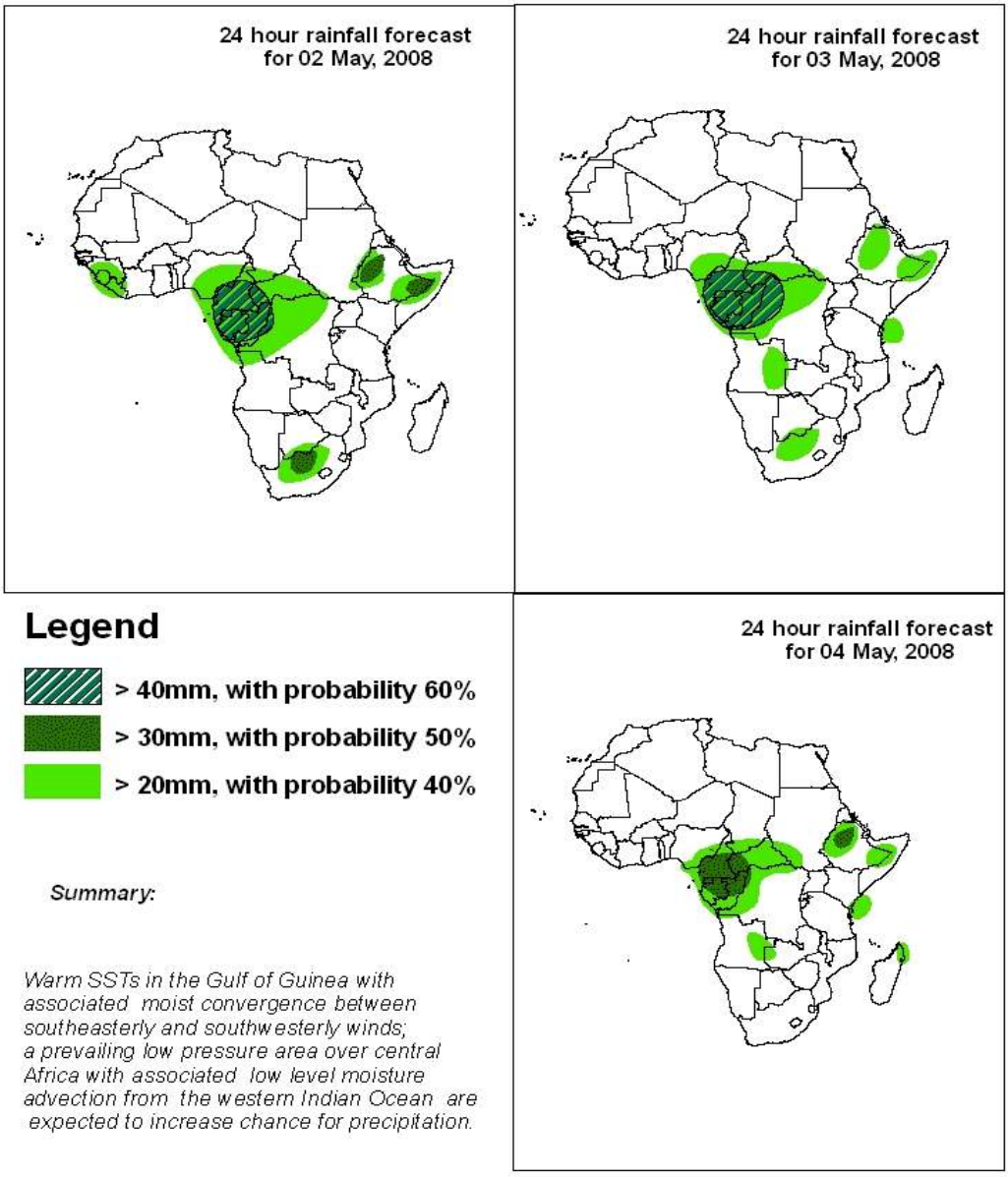
Forecast Guidance for Africa

NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 01 MAY 2008
Valid: 00Z, 02-04 MAY, 2008

1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceedance based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.



2. Model discussion

Model comparison (Valid from 00Z; 01 April 2008): There is a general agreement between the three models with respect to positioning of large scale features.

2.1. Flow at 850hPa

T+24h, an anticyclonic flow pattern is expected to dominate over a large part of North Africa with a trough over northern Morocco. A general low pressure area is expected to dominate over the Sahel, Central and Eastern Africa, causing isolated convergence in the area. A low pressure is expected to dominate over the equatorial Western Indian Ocean causing moisture advection inland along the coast of Somalia, Kenya and Tanzania by a southeasterly flow. Convergence activity is expected to occur off the coast of Gabon, over southern Congo and northwestern Angola due to Southeasterlies emanating from the Indian Ocean and Northeasterlies from the anticyclonic circulation over North Africa. An anticyclonic flow pattern is expected to dominate over a large part of southern Africa with a low pressure over southern Angola, Namibia and western Botswana and a trough over southern Madagascar.

T+48h, an anticyclonic flow pattern is expected to prevail over North Africa while a general low pressure area is expected to prevail over the Sahel, Central and Eastern Africa. A low pressure with associated convective activity is expected to dominate off the coast of Gabon and Congo. An equatorial low pressure is expected to prevail off the coast of Somalia and Kenya contributing to a confluence flow pattern off the coast of Tanzania. An anticyclonic flow pattern is expected to prevail over a large part of southern Africa with a low pressure over Namibia, western Botswana and northwestern South Africa, and a trough over southeastern Madagascar.

T+72, an anticyclonic flow pattern is expected to prevail over North Africa. A general low pressure area is expected to prevail over the Sahel, Central and Eastern Africa.
An equatorial low pressure is expected to continue dominating the coasts of Somalia and Kenya with a southeasterly flow pattern over Tanzania. A low pressure area is expected to dominate over southern Angola and Namibia with a trough over western South Africa, while a high pressure center with a shallow trough is expected to dominate over central Mozambique Channel and the remaining part of the region.

2.2. Flow at 500hPa

T+24h, a trough is expected to dominate over the red sea and the extreme northeast of Africa, over Libya and Egypt. An extensive anticyclonic circulation is expected to dominate from the Northwestern Africa to latitude 20^{o}S with embedded confluence lines. A low pressure is expected to dominate over Namibia, southern Botswana and western South Africa with a high pressure center to its south in the Ocean and a trough over southeastern South Africa to southern Madagascar.

T+48h, an extensive anticyclonic flow pattern is expected to dominate almost over all Africa, except over Egypt and northeastern Sudan and along southern Madagascar where a trough is expected to dominate and over Namibia, southern Botswana and western South Africa where a low pressure is expected to dominate.

T+72h, an extensive anticyclonic flow pattern is expected to prevail almost over all Africa, except over Libya, eastern Niger, northern Chad and Egypt, where a trough is expected to dominate, and over Equatorial Guinea, Gabon, southern Namibia, southern Botswana and South Africa where a low pressure is expected to dominate.

2.3. Flow at 200hPa

T+24h, an upper level westerly jet stream is expected to dominate over North and West Africa with an embedded trough over Algeria and northern Niger. A general anticyclonic circulation is expected to dominate between latitude 10^{o}N and 10^{o}S. A westerly flow pattern is expected to dominate over a large part of southern Africa with an upper level low pressure over South Africa and an anticyclonic circulation to its south.

T+48h, an upper level westerly jet stream is expected to prevail over North Africa with a trough over eastern Algeria and western Libya. A general anticyclonic circulation is expected to prevail between latitude 10^{o}N and 10^{o}S. A westerly flow pattern is expected to continue dominating over a large part of southern Africa with an upper level low pressure over western South Africa, an upper level trough over southern Madagascar and an upper level high pressure center in between.

T+72h, side by side ridge and trough are expected to dominate over northern Morocco and Algeria and over Tunisia and Libya, respectively. A general anticyclonic circulation is expected to dominate between latitude 20^{o}N and 20^{o}S with a strong divergent flow pattern over Gabon. A westerly flow pattern is expected to continue dominating over a large part of southern Africa with an upper level low pressure over southern South Africa.

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