Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 16th May 2007

AFRICAN DESK
CLIMATE PREDICTION CENTER
National Centers for Environmental predictions
National Weather Service
NOAA
Camp Springs MD 20746

FORECAST DISCUSSION 14H00 EST 16th May 2007
Valid: 00Z 17th May 2007- 00Z 19th May 2007.

FLOW AT 200MB

At T+24 hrs, the general flow pattern over Southern Africa (South of the Equator) shown by the GFS, ECMWF and UK-MET models indicates a trough lying above the southern parts of the sub continent, associated with west-northwesterly stream up to 100 kt, causing convergence over these areas. Another trough is lying to the northeastern coast of Madagascar. There is a shallow trough above western Mozambique, stretching into Zambia, causing convergence over these areas. A high pressure system with two cells, centered above D.R. Congo/Tanzania border (4^oS 31^oE) and to the west of the coast of Angola (9^oS 9^oE), is causing divergence over the rest of the sub continent.
At T+48 hrs, the trough which was lying above the southern parts of the sub continent has shifted eastward. The shallow trough which was lying above western Mozambique, stretching into Zambia has slightly shifted eastward, causing convergence over northwestern Mozambique and southwestern Tanzania. The trough which was lying to the northeastern coast of Madagascar has also shifted eastward, weakening in amplitude. Divergence prevails over the rest of the sub continent.
At T+72 hrs, the trough which was lying above the southeastern parts of the sub continent has shifted to the Mozambican Channel, weakening in amplitude and linking the shallow trough which was above northwestern Mozambique. The shallow trough which was to the east of the northeastern coast of Madagascar has shifted further east. There is a trough lying above the southwestern parts of the sub continent, hence convergence.

FLOW AT 500MB

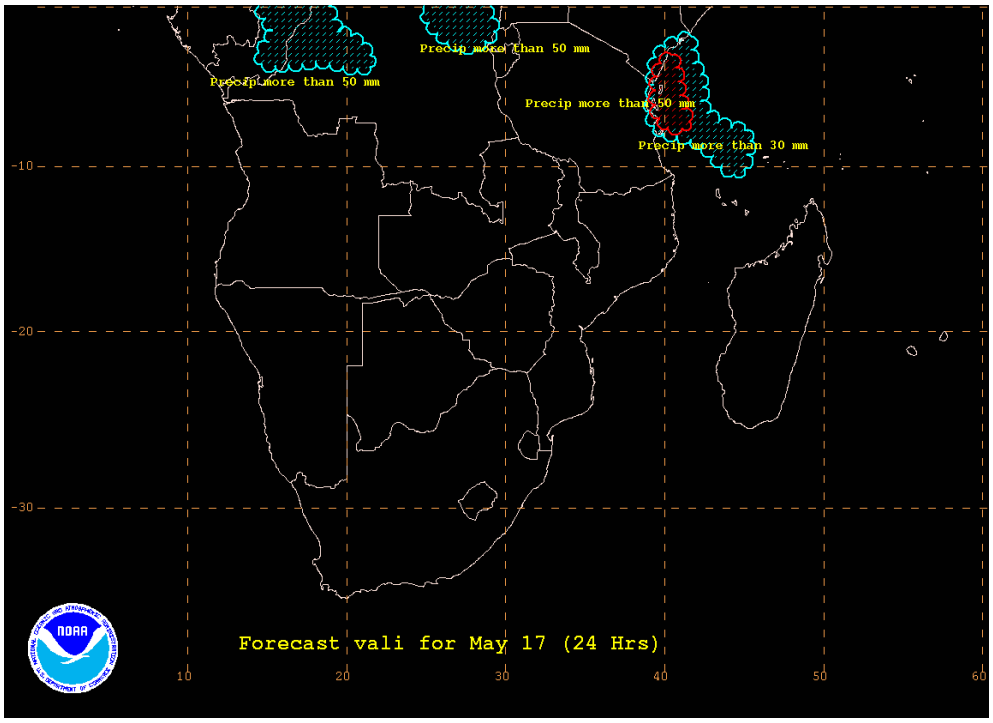
At T+24 hrs, the GFS models show a trough lying above the southeastern parts of the sub continent with its southeast axis lying at 55°S 35°E and its northwest axis lying at 20°S 10°E, linking the shallow trough above western Mozambique and causing convergence over Namibia, southwestern Botswana, eastern South Africa, southern and western

Mozambique, eastern Zimbabwe and over western Zambia. Areas which are to the east of the northeastern coast of Madagascar and western Gabon are under convergence, due to a shallow trough. The Mascarene high with two cells, centered at 10°S 46°E and at 11°S 21°E is ridging the most of the sub continent. The St Helene high pressure cell is centered at 24°S 5°E, ridging the southwestern parts of the sub continent.
At T+48 hrs, the trough which was lying over southeastern parts of the sub continent has shifted eastward, weakening in amplitude, as the St Helene high is shifting eastward. Convergence over Mozambique, northwestern Zambia and northwestern Gabon prevails. Divergence over the rest of the sub continent is maintained.
At T+72 hrs, the trough over the Mozambican Channel is deepening, developing a closed circulation to the west of the southwestern coast of Madagascar. There is a upper level trough in the tear-off stage, lying above the southwestern coast of the sub continent, thus strong winds and thundershowers are expected over western and southwestern South Africa. Over the rest of the sub continent, there is no significant change in the general flow pattern.

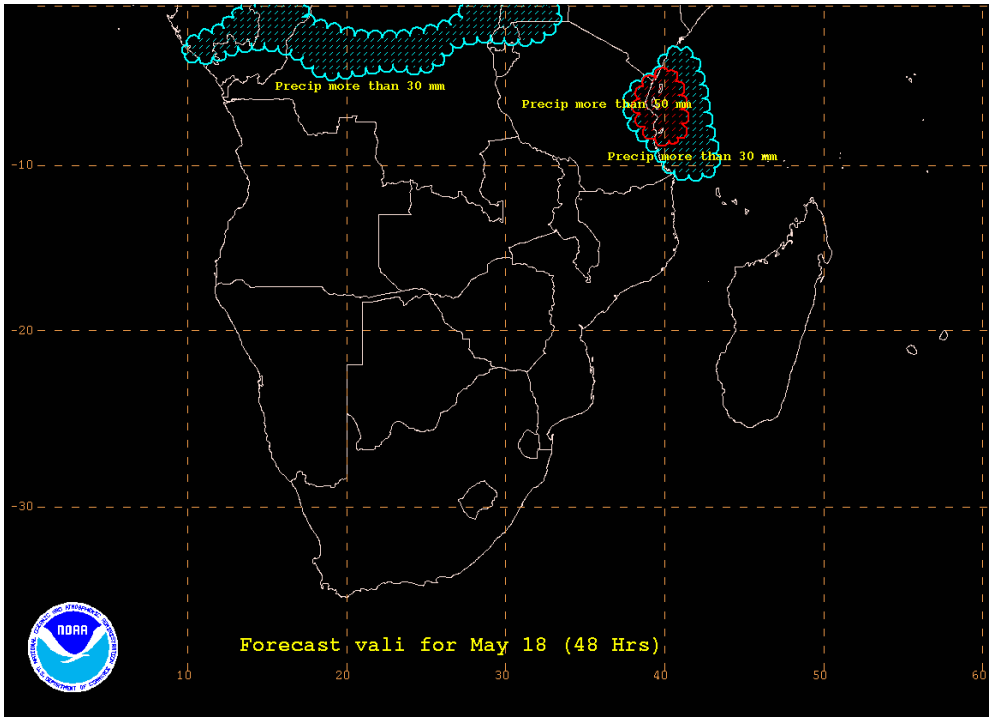
FLOW AT 850MB

At T+24 hrs, there is a trough lying over southern South Africa, causing convergence over these areas. Areas of convergence can also be seen over western Namibia, southwestern Angola and to the west of the coast of Namibia, due to cut-off lows. Areas which are to the north of 10^{o}S latitude are under convergence due to a southeasterly trough, thus isolated thundershowers and strong wind is expected over these areas. The Mascarene high pressure with two cells, centered at 30°S 70°E and at 22°S 35°E is throwing a ridge into southern Madagascar and central parts of the sub continent, but causing onshore flow along the northeastern coast of Madagascar, northeastern extreme of the coast of Mozambique and over southeastern Tanzania. The St Helene high is centered at 29^{o}S 4^{o}E, ridging the southwestern parts of the sub continent.
At T+48 hrs, the trough which was lying over southern South Africa has shifted further east, weakening in amplitude as there is a sub tropical high pressure cell, lying over South Africa, hence subsidence and causing onshore flow along central Mozambique. The St Helene high is hardly ridging the western coast of the sub continent. Over the rest of the sub continent, there is no significant change in the general flow pattern.
At T+72 hrs, the trough which was lying further south of the Mozambican Channel has shifted further eastward, weakening, due to the ridge of the Mascarene high. The cut-off low which was lying to the west of the coast of Namibia has filled up. Areas which are to the north of 8^{o}S latitude are under convergence due to a southeasterly trough. There is a well developed trough with a closed circulation near 39^{o}S 19^{o}E, lying over the southwestern coast of the sub continent, causing convergence over western and southwestern South Africa. Anticyclonic flow prevails over the rest of the sub continent, hence subsidence.
There is a huge spread between the ensemble products of the 50 mm isolines of 6 hourly total precipitations over eastern coast of Tanzania, to the northwest of the northern coast of Madagascar extending to the coast of Kenya, over northeastern D.R. Congo and northwestern Gabon up to T+48 hrs, which implies uncertainty in the intensity of precipitation over these areas.

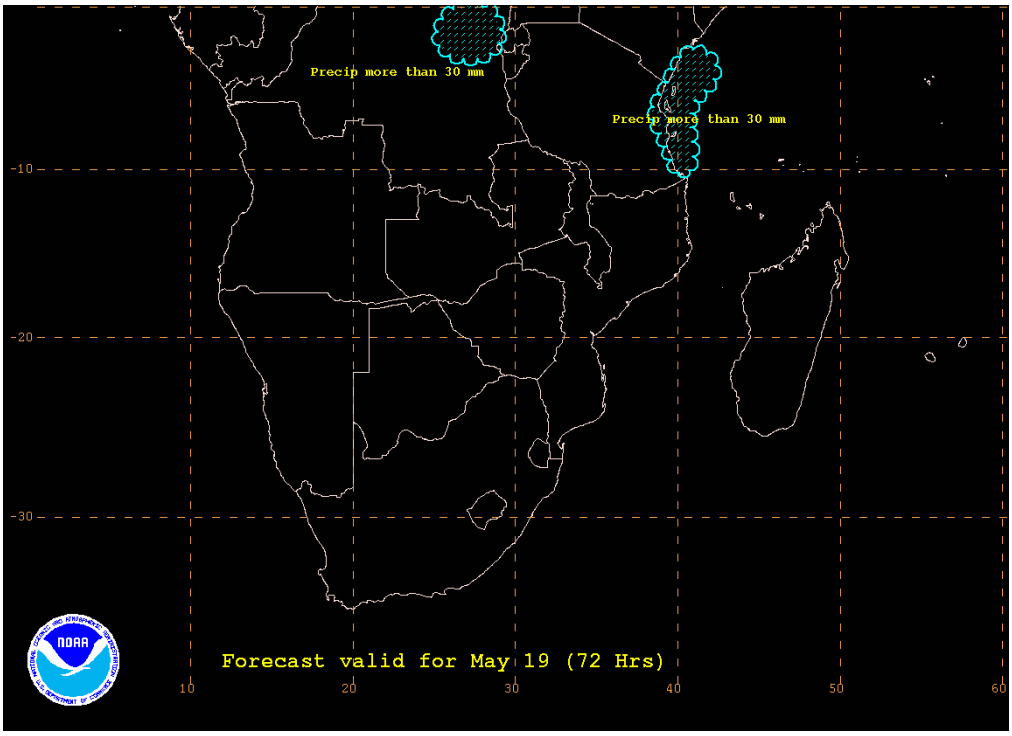
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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