Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 23rd April 2007

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

FORECAST DISCUSSION 14H00 EST 23rd April 2007
Valid: 00Z 24th April 2007- 00Z 26th April 2007.

At T+24 hrs, the general flow pattern at 200 mb over Southern Africa (South of the Equator) shown by the GFS, ECMWF and UK-MET models is a well-developed upper level trough which has already reached the cut-off stage above the Mozambican Channel, stretching into Tanzania, with a closed circulation near 31°S 39°E, associated to a west-southwesterly stream thus hence convergence over these areas. A high pressure system centered over western D.R. Congo (5°S 20°E) is causing divergence over the rest of the sub continent. At T+48 hrs, there is no significant change in the general flow pattern, except that the upper level trough with west-southwesterly winds up to 85Kt, which was above the Mozambican Channel is slightly shifting eastward (quasi-stationary). There is a persistent high pressure with the cell lying near 12°S 70°E, hence subsidence over these areas. At T+72 hrs, the upper level trough which was above the Mozambican Channel has weakened in amplitude merging with the west-southwesterly stream, but convergence over these areas is maintained. The three models show that there is a trough above the Atlantic Ocean, approaching the western coast of South Africa. The rest of the sub continent is under divergence.

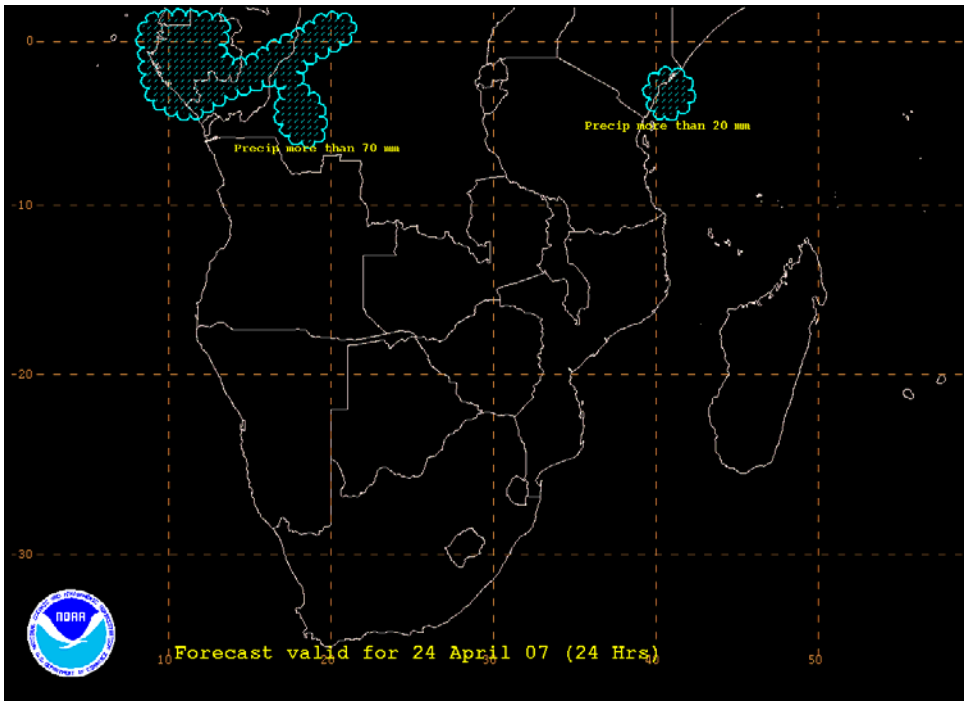
At 500mb, the GFS models show a trough lying above the Mozambican Channel, stretching into northeastern Zambia, with southwesterly flow, causing convergence over these areas. There are two lows centered at 29°S 39°E and at 33°S 49°E, deepening, associated with this trough. A shallow trough is lying above the western coast of South Africa. The three models show that the St Helene high is lying over the western parts of the sub continent, with its cell centered at 20°S 19°E, throwing a ridge over the most of the sub continent. The Mascarene high is centered at 10°S 60°E ridging the rest of the sub continent. At T+48 hrs, the three models show that the shallow trough which was lying above the western coast of South Africa has weakened. The upper level lows above southern Mozambican Channel has merged forming a much more pronounced upper level

low, causing convergence over central and southeastern coast of Mozambique, thus isolated severe thunderstorms is expected. The rest of the sub continent is under divergence of the Mascarene and St Helene highs. At T+72 hrs, there is no significant change in the general flow pattern, except that the there is trough above the Atlantic Ocean, approaching the southwestern coast of the sub continent.

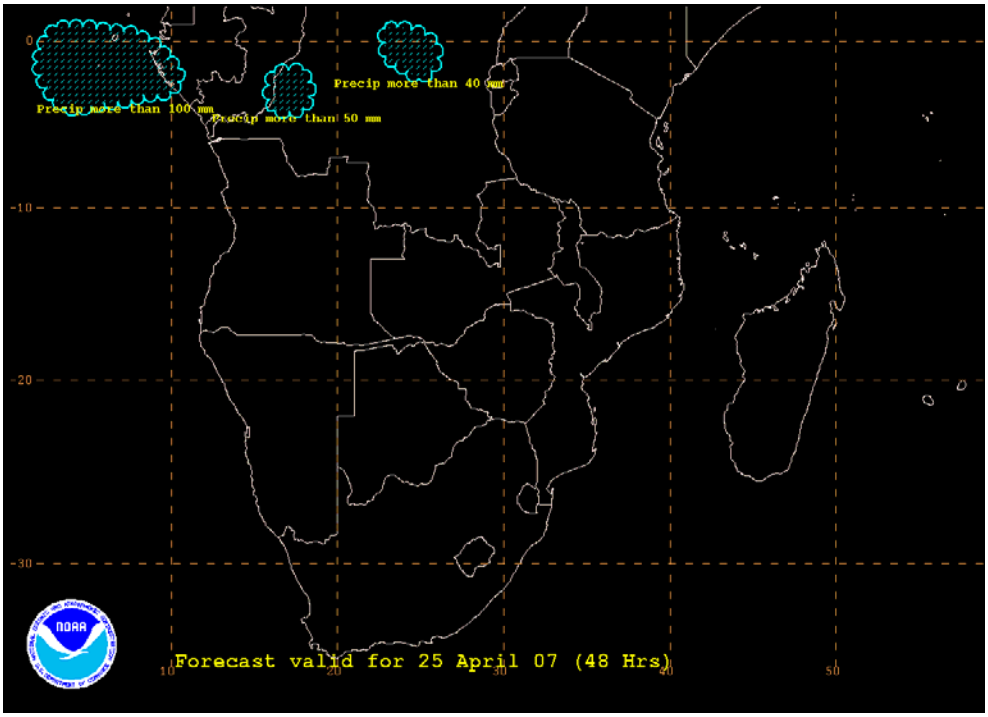
At 850mb, there is a shallow trough over southwestern coast of the sub continent and to the northeast of the northern coast of Madagascar, causing convergence over these areas. A southeasterly trough lying over the Mozambican Channel is deepening causing convergence over the eastern coast of Mozambique. Convergence is also seen over northwestern Gabon and northwestern D.R. Congo. The Mascarene high has two cells; one centered at 39°S 39°E, throwing a ridge into most parts of the sub continent and another one at 33°S 57°E. The St Helene high has also two cells, centered at 29°S 30°W and at 21°S 0°longitude, hardly ridging the northwestern coast of the sub continent. At T+48 hrs, there is no significant change in the general flow pattern, except that the trough over the Mozambican Channel has developed a closed cyclonic circulation at 21^{o}S 39^{o}E, enhancing convergence over central coast of Mozambique thus chance of heavy rainfall and strong wind is expected over these areas. At T+72 hrs, the low associated with a southeasterly trough has weakened, due to the ridge of the Mascarene high. Convergence over western Namibia and South Africa is maintained. The rest of the sub continent is under divergence.

There is a huge spread between the ensemble products of the 50 mm isolines of 6 hourly total precipitations over northwestern Gabon and southern Madagascar up to T+72 hrs, denoting uncertainty in the intensity of precipitation over these areas.

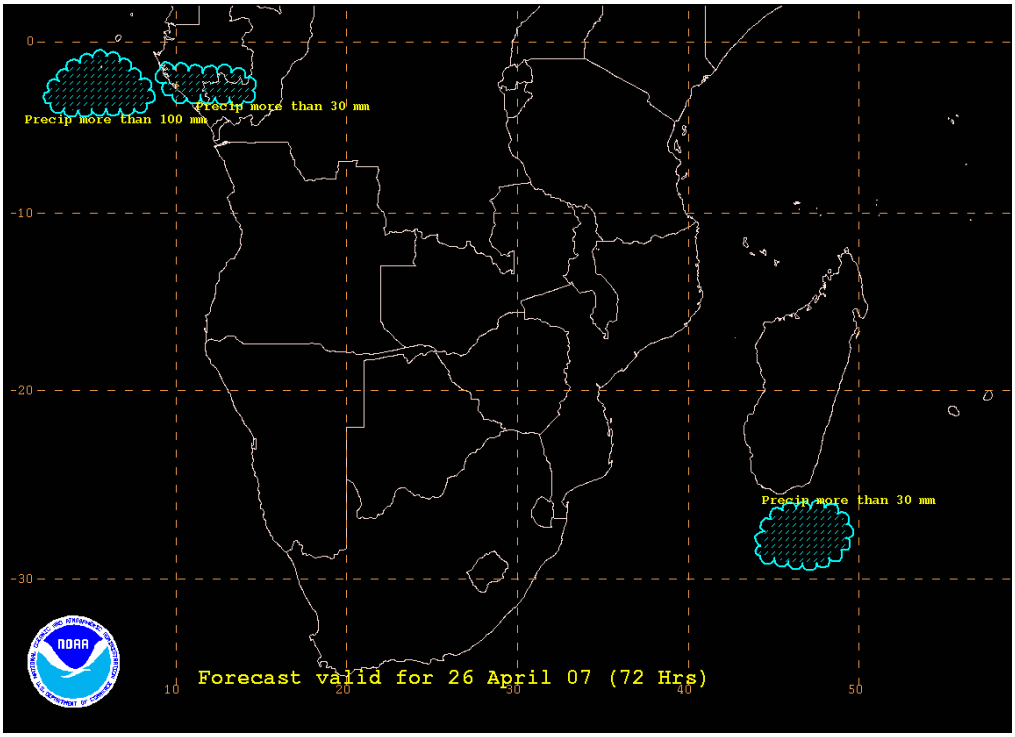
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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