Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 27th April 2007

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

FORECAST DISCUSSION 14H00 EST 27th April 2007
Valid: 00Z 28th April 2007- 00Z 30th 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 trough lying above the southwestern parts of the sub continent, associated to a west-northwesterly stream up to 110 kt. Another trough is lying to the east of the coast of Madagascar, linking the shallow trough further northeast of the northern coast of Madagascar, causing convergence over these areas. A high pressure system cell lying over Tanzania (9^oS 34^oE) 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 trough with west-northwesterly winds up to 110 Kt, which was above the southwestern parts of the sub continent, has shifted eastward, stretching into Botswana. The trough which was to the east of the eastern coast of Madagascar has slightly shifted eastward, but the linking shallow trough to the northeast of the northern coast of Madagascar is deepening. Divergence is maintained over the rest of the sub continent. At T+72 hrs, the trough which was to the east of the eastern coast of Madagascar has weakened, shifting further east. The shallow trough to the northeast of Madagascar has developed a closed circulation near 9^oS 51^oE. The three models show that the trough which was above the southeastern parts of the sub continent has slightly shifted eastward, weakening and the associated west-northwesterly wind has also weakened. The rest of the sub continent is under divergence.

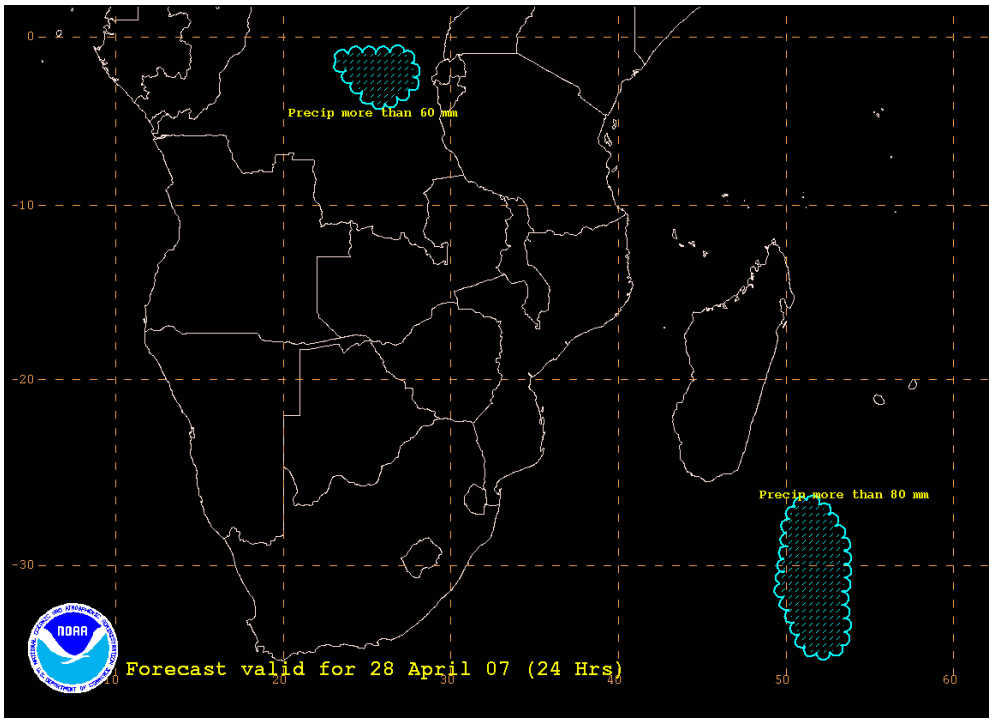
At 500mb, the GFS models show a well developed upper level trough lying above the southern parts of the sub continent, stretching into western Zambia, causing convergence over these areas. There is a shallow trough lying further southeast of Madagascar. Slight convergence can be seen to the northwestern Angola and over Gabon. The three models show that the St Helene high centered at 25°S 11°W is throwing a ridge over the western coast of the sub continent. The Mascarene high with two cells centered at 14°S 49°E and at 30°S 68°E is ridging 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 has shifted to the southeast, causing convergence over eastern South Africa, southern Mozambique, Zimbabwe and over western Zambia. At T+72 hrs, the trough which was above southeastern parts of the sub continent has developed a closed circulation near 23^{o}S 36^{o}E, thus strong wind and thundershowers are expected over these area. The rest of the sub continent is under divergence of the St Helene and Mascarene highs. The ensemble members of the GFS show a huge spread of the 5700m and 5870m height contours over Zambia, further east and northeast of the coast of Madagascar up to T+72, which implies uncertainty in the stretching and also in amplitude of the trough. But there is uncertainty in depth of the trough at T+60 hrs over southeastern South Africa, due to lesser extent.

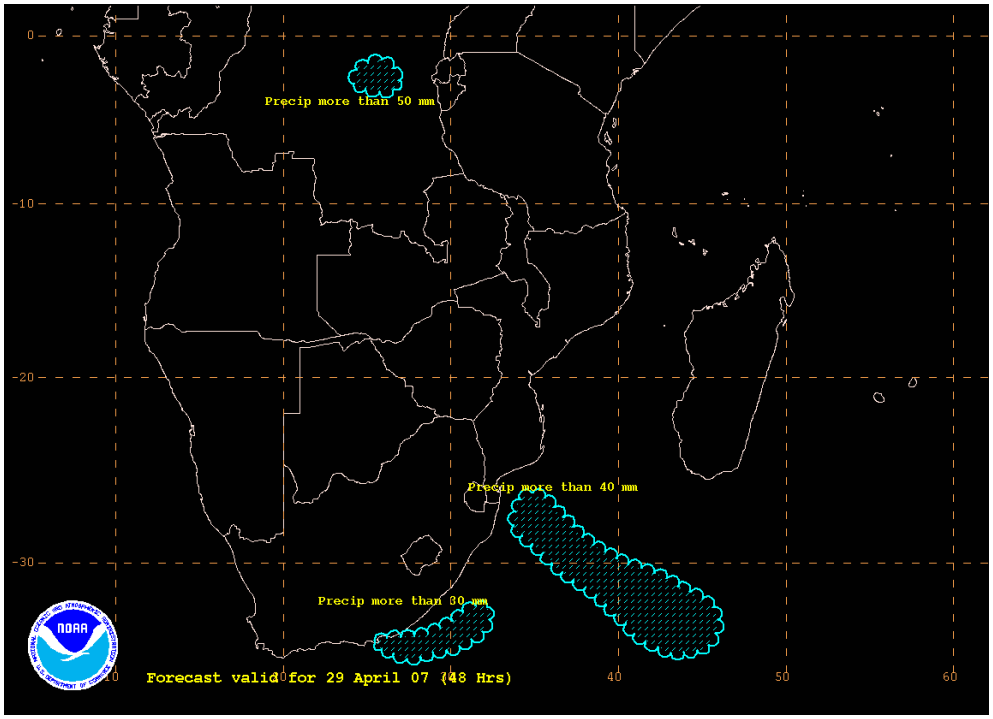
At 850mb, there is a trough lying over the southeastern parts of the sub continent, causing convergence over these areas. Convergence is also seen over central Angola and western Botswana. Areas which are to the north of 11^{o}S latitude are under convergence, due to a southeasterly trough. The St Helene high cell is centered at 29°S 3°W and is ridging the southwestern coast of the sub continent. The Mascarene high is centered at 34°S 69°E, throwing a ridge into the rest of the sub continent. At T+48 hrs, there is no significant change in the general flow pattern, except that the trough which was lying over the southeastern parts of the sub continent has shifted northeastward, thus strong wind and thundershowers are expected over central coast of Mozambique and northeastern Zimbabwe. A bud-off high lying southeastern South Africa is causing onshore flow along the southern and central coast of Mozambique. At T+72 hrs, the trough which was over the southeastern parts of the sub continent has slightly shifted northeastward into the Mozambican Channel, causing convergence over central coast of Mozambique and southwestern Madagascar, where heavy rainfall is expected. Convergence over northwestern Angola, Gabon and northeastern D.R. Congo is maintained. Onshore flow along the central coast of Mozambique, caused by the high pressure cell centered at 29°S 28°E prevails. The rest of the sub continent is under divergence of the St Helene and Mascarene highs.

There is a huge spread between the ensemble products of the 50 mm isolines of 6 hourly total precipitations over Gabon, northwestern Angola, northern D.R. Congo and southern Mozambique up to T+72 hrs, and central coast of Mozambique from T+66 hrs, denoting uncertainty in the intensity of precipitation over these areas.

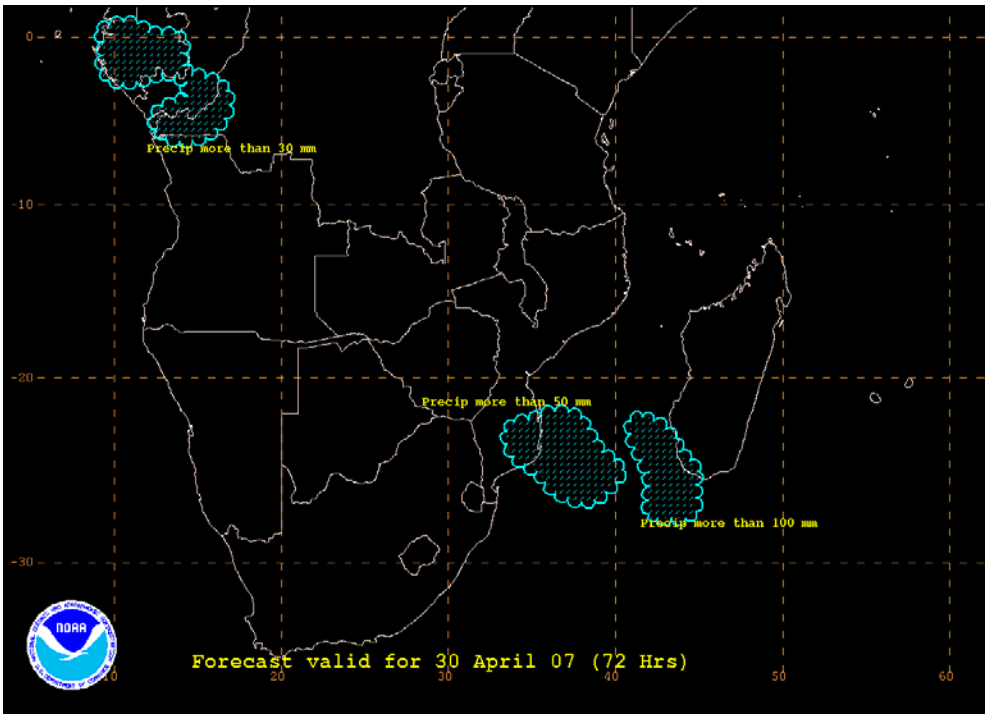
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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