Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 16th April 2007

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

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

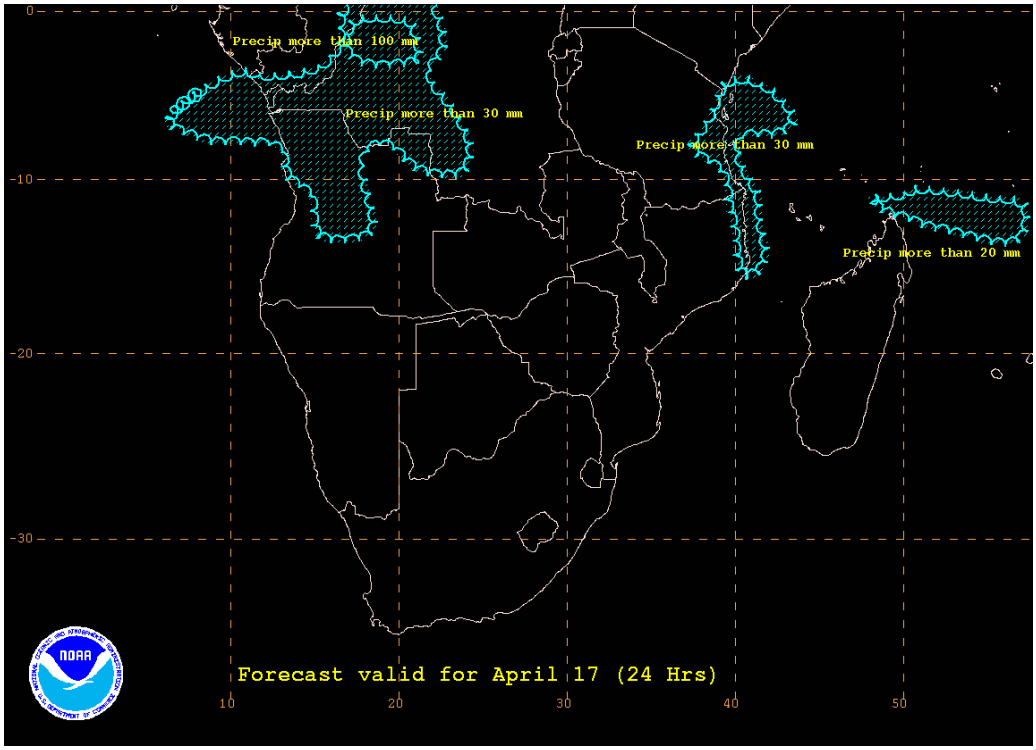
At 200mb, the GFS, ECMWF and UK-MET models show the following general flow pattern over Southern Africa (South of the Equator). There is a shallow trough to the extreme southeast of the Mozambican Channel, with southwesterly flow. A trough over the Atlantic Ocean is approaching the southwestern coast of the sub continent. Two high pressure cells, with center located to the north of Angola (5°S 16°E) and over the extreme northeast of Mozambique(11°S 39°E) are causing divergence over the rest of the sub continent. At T+48 hrs, the shallow trough which was to the extreme southeast of the Mozambican Channel is shifting northeastward stretching into northern Madagascar, with southwesterly winds up to 70 kt, causing convergence over these areas and thus the high pressure cell over the extreme northeast of Mozambique has shifted northward. The trough which was approaching the southwestern coast of the sub continent slightly shifts southeastward. Elsewhere divergence prevails. At T+72 hrs, the trough which was over Madagascar is deepening. The three models show a low lying near the equator at 58^{o} E longitude. The trough to the east of the southwestern coast of the sub continent has shifted further southeastward weakening, but causing convergence over the southwestern parts of South Africa. The rest of the sub continent is under divergence.

At 500mb, the GFS models show a shallow trough to the south of the Mozambican Channel, linking the shallow trough over the coast of Tanzania, causing convergence over these areas. Convergence is also seen over areas which are to the northwest of Angola. The three models show the Mascarene high with two cells, one centered over Zimbabwe at 19°S 30°E, throwing a ridge over the most of the sub continent another one centered over northwestern Madagascar at 15°S 46°E, ridging in from the southeast causing onshore flow along the Northern extreme of the coast of Mozambique and over the coast of Tanzania. At T+48 hrs, the three models show that the shallow troughs have weakened. There is a trough over the Atlantic Ocean, approaching the southwestern coast

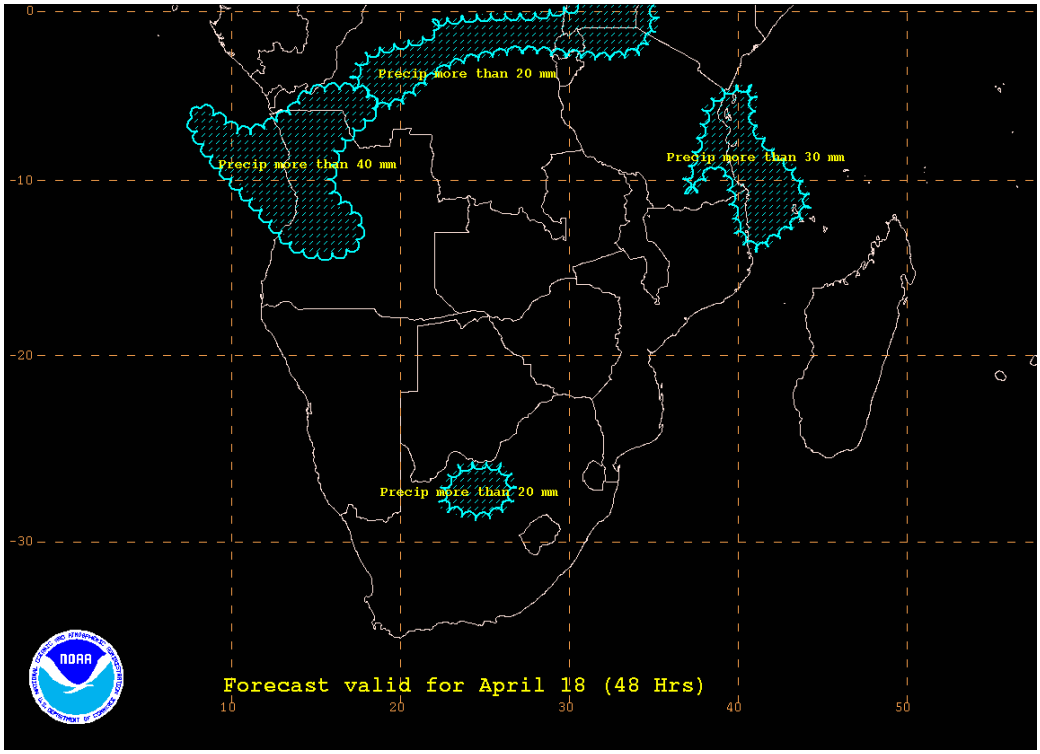
of the sub continent. Areas of convergence can be seen to the east of the coast of Madagascar. There is a slight convergence over the western coast of Namibia and Angola. The rest of the sub continent is under divergence of the Mascarene high. At T+72 hrs, the trough which was to the east of Madagascar has deepened, developing closed circulation at 28°S 56°E and at 9°S 55°E causing convergence over these areas. Convergence over the coast of Namibia and Angola is maintained. There is a shallow trough lying over the northeastern coast of South Africa. The Mascarene high has shifted southeastward throwing a ridge into the rest of the sub continent. The ensemble members of the GFS show a huge spread of the 5700m and 5870m height contours over the Mozambican Channel, to the east and north of the coast of Madagascar, central and southern Tanzania and D.R. Congo at T+24 up to T+72, which implies uncertainty in the position and deepening of the shallow troughs.

At 850mb, there is a shallow trough over the southwestern parts of the sub continent and another lying over the southeastern coast of South Africa, causing convergence over these areas. Convergence is also seen to the east of the coast of Namibia, over the coast of Angola, northeastern D.R. Congo and central South Africa. The St Helene high centered at 32°S 16°W is hardly ridging the southwestern coast of the sub continent. The Mascarene high with its center located at 31°S 65°E is ridging the rest of the sub continent. At T+48 hrs, the shallow trough which was to the southwestern parts of the sub continent has shifted eastward, and there is a bud-off high centered at 32°S 39°E, blocking the deepening of the shallow trough which was over southeastern coast of South Africa. Convergence over the coast of Namibia, Angola and over D.R. Congo is maintained. There is a low over the coast of Angola, hence heavy rainfall is expected. Another low is lying further northeast of the coast of Madagascar at 11°S 66°E with a southeasterly flow. Divergence caused by the Mascarene and St Helene highs prevails over the rest of the sub continent. At T+72 hrs, the low with southeasterly flow, which was further northeast of the coast of Madagascar, is tracking northwestward causing convergence over northern Madagascar, the coast of Tanzania and the northeastern parts of Mozambique. Convergence is also seen over southern South Africa, Namibia, Angola and northern D.R. Congo. The St Helene high centered at 35°S 4°E is ridging the western coast of South Africa. The rest of the sub continent is under divergence of the Mascarene high.
There is a huge spread between the ensemble products of the 50 mm isolines of 6 hourly total precipitations over the coast of Tanzania extending to the north of the coast of Madagascar and over western of Angola at T+24 up to T+72 hrs and over central and northeastern South Africa from T+60 hrs up to T+72 hrs, denoting uncertainty in the intensity of precipitation over these areas.

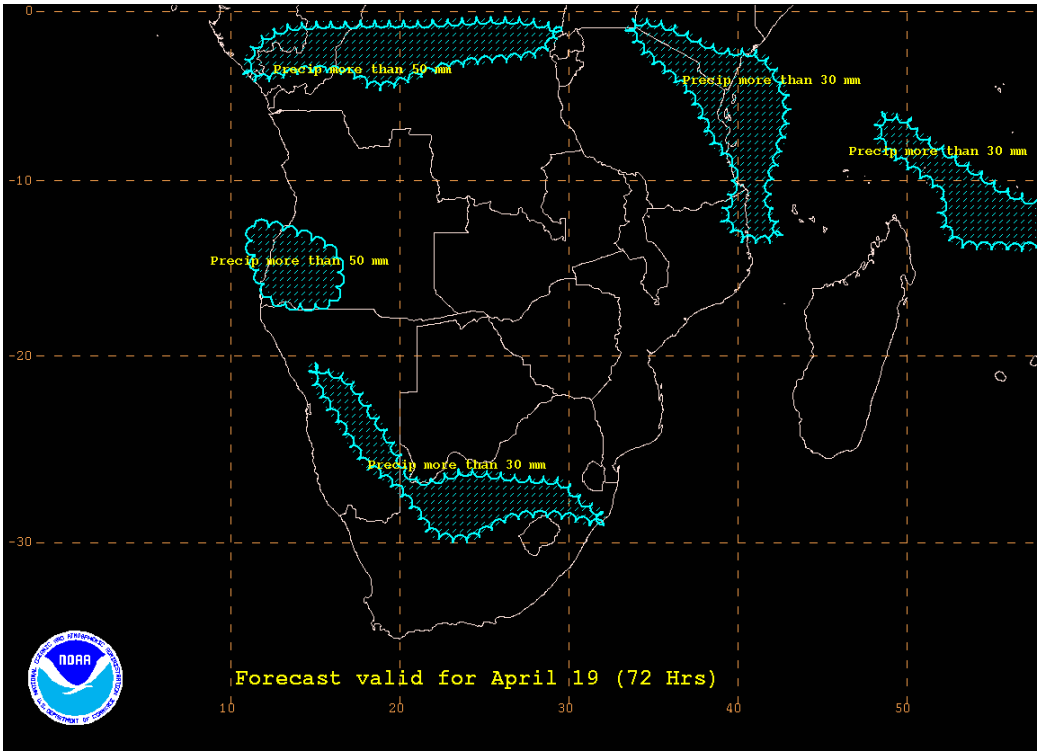
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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