

WTIO30 FMEE 011256

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 11/1/20232024

1.A SEVERE TROPICAL STORM 1 (ALVARO)

2.A POSITION 2024/01/01 AT 1200 UTC:

WITHIN 20 NM RADIUS OF POINT 21.5 S / 42.9 E

(TWENTY ONE DECIMAL FIVE DEGREES SOUTH AND
FORTY TWO DECIMAL NINE DEGREES EAST)

MOVEMENT: EAST 8 KT

3.A DVORAK ANALYSIS: 4.0/4.0/D 0.5/6 H

4.A CENTRAL PRESSURE: 985 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 60 KT

RADIUS OF MAXIMUM WINDS (RMW): 33 KM

6.A EXTENSION OF WIND BY QUADRANTS (KM):

28 KT NE: 185 SE: 150 SW: 110 NW: 110

34 KT NE: 95 SE: 95 SW: 65 NW: 65

48 KT NE: 35 SE: 35 SW: 40 NW: 35

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 900 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2024/01/02 00 UTC: 21.4 S / 44.6 E, VENT MAX= 030 KT, TROPICAL DEPRESSION
28 KT NE: 100 SE: 140 SW: 0 NW: 95

24H: 2024/01/02 12 UTC: 21.4 S / 46.3 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

36H: 2024/01/03 00 UTC: 21.7 S / 48.6 E, VENT MAX= 030 KT, TROPICAL DEPRESSION
28 KT NE: 120 SE: 165 SW: 120 NW: 0

48H: 2024/01/03 12 UTC: 22.7 S / 50.3 E, VENT MAX= 040 KT, MODERATE TROPICAL
STORM

28 KT NE: 100 SE: 140 SW: 100 NW: 0

34 KT NE: 0 SE: 95 SW: 55 NW: 0

60H: 2024/01/04 00 UTC: 23.5 S / 52.2 E, VENT MAX= 035 KT, POST-TROPICAL
DEPRESSION

28 KT NE: 130 SE: 140 SW: 130 NW: 0

34 KT NE: 0 SE: 100 SW: 65 NW: 0

72H: 2024/01/04 12 UTC: 24.2 S / 54.1 E, VENT MAX= 025 KT, POST-TROPICAL

DEPRESSION

2.B LONGER-RANGE OUTLOOK:

96H: 2024/01/05 12 UTC: 25.6 S / 58.1 E, VENT MAX= 020 KT, REMNANT LOW

2.C ADDITIONAL INFORMATION:

HAPPY NEW YEAR 2024 FROM RSMC LA REUNION

T=CI=4.0+

OVER THE LAST 6 HOURS, ALVARO'S CLOUD PATTERN HAS EVOLVED, PRESENTING A DEVELOPING EYE PATTERN AT THE BEGINNING OF THE PERIOD, BUT THIS DID NOT LAST AND MIGRATED BACK INTO A CURVED BAND. AT 1045UTC, THE GCOM MICROWAVE PASS REVEALED A CLOSED CIRCULATION IN THE LOWER LAYERS, COINCIDING WITH A SLIGHTLY LESS CLEAR VISIBLE CLOUD PATTERN. IN THIS CONFIGURATION, THE DVORAK ANALYSIS ESTIMATED MEAN WINDS OF AROUND 60KT, I.E. AT THE MAXIMUM THRESHOLD FOR A STRONG TROPICAL STORM. WITHOUT A RECENT ASCAT PASS AND IN THE ABSENCE OF IN-SITU MEASUREMENTS, IT IS DIFFICULT TO SAY THAT CYCLONIC WINDS WILL BE REACHED JUST BEFORE ALVARO'S LANDFALL.

NO CHANGE IN TERMS OF TRACK, ALVARO IS FOLLOWING THE WESTERLY FLOW DRIVEN BY A RIDGE OF HIGH PRESSURE NEAR THE EQUATOR LOCATED FURTHER NORTH, AND A WEAK TROUGH PASSING FURTHER SOUTH. THE SYSTEM SHOULD REACH THE COAST OF MADAGASCAR THIS MONDAY AFTERNOON OR EARLY EVENING. AFTER CROSSING MADAGASCAR ON TUESDAY, THE VORTEX SHOULD EMERGE OVER THE EAST COAST OF MADAGASCAR IN THE MANAKARA AREA ON TUESDAY NIGHT. IT SHOULD BE NOTED THAT THERE IS STILL UNCERTAINTY AS TO THE SPEED AT WHICH ALVARO IS MOVING ON LAND, LEAVING A TIME FRAME FOR ITS EMERGENCE AT SEA OF ALMOST 6 HOURS. THEREAFTER, GUIDED BY THE RIDGE OF HIGH PRESSURE FORTIFYING ITSELF OVER THE NORTHERN MASCARENE ISLANDS AND BY THE FLOW FURTHER SOUTH, ALVARO WILL CONTINUE ITS TRACK IN A GENERAL SOUTH-EASTERLY DIRECTION, BRINGING IT UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS, WITHIN WHICH THE SYSTEM WILL CONTINUALLY WEAKEN.

IN TERMS OF INTENSITY, ALVARO CONTINUES TO BENEFIT FROM FAVORABLE ENVIRONMENTAL CONDITIONS, WITH SHEAR REMAINING MODERATE AND OCEAN POTENTIAL VERY HIGH NEAR THE MALAGASY COAST. THE RSMC INTENSITY FORECAST THEREFORE MAINTAINS AN INTENSIFICATION UNTIL LANDFALL. AFTER A CLASSIC WEAKENING INLAND, ALTHOUGH CONVECTIVE ACTIVITY SHOULD REMAIN CONSEQUENTIAL, THE VORTEX SHOULD RECONSOLIDATE LATE ON TUESDAY NIGHT AND EMERGE EAST OF MADAGASCAR THANKS TO GOOD SURFACE CONVERGENCE. THIS POTENTIAL FOR REINTENSIFICATION COULD BE REDUCED IF THE VORTEX WEAKENS MORE MARKEDLY AS IT CROSSES MADAGASCAR. IN THE CASE OF THE CURRENT FORECAST, REINTENSIFICATION IS THEN POSSIBLE FOR ALMOST 24 HOURS, BUT THE INCREASE IN SHEAR AND THE INTRUSION OF DRY AIR FROM THE NORTH-WESTERN SECTOR OF THE SYSTEM SHOULD THEN CONTINUALLY WEAKEN ALVARO FROM WEDNESDAY EVENING.

IMPACTS ON MADAGASCAR (BY DEFAULT, THE CHRONOLOGY OF EVENTS IS GIVEN IN UTC):

- GALE FORCE WINDS CURRENTLY ARRIVING OVER THE PROVINCE OF TOLIARA AND INTO THE MIDDLE OF THE NIGHT FROM MONDAY TO TUESDAY. POSSIBLE CYCLONIC-FORCE WINDS NEAR THE POINT OF IMPACT.
- HEAVY RAINS AND RISK OF LOCAL FLOODING FROM MONDAY ONWARDS ON THE WEST COAST, EXTENDING ON TUESDAY TO THE EAST COAST (FIANARANTSOA PROVINCE). ACCUMULATIONS OF 100-200MM DURING THE CROSSING EPISODE. IN THE MANAKARA SECTOR AND FURTHER SOUTH, RAINFALL COULD BE HEAVIER (LOCALLY 400MM) DUE TO THE CONVECTIVE ACTIVITY GENERATED BY THE CONVERGENCE OF FLOWS, BEFORE THE SYSTEM PASSES.
- AVERAGE WAVES OF 4 TO 6M NEAR THE IMPACT ZONE ON MONDAY BETWEEN 12UTC AND 18UTC.