

WTIO30 FMEE 010658

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 10/1/20232024

1.A SEVERE TROPICAL STORM 1 (ALVARO)

2.A POSITION 2024/01/01 AT 0600 UTC:

WITHIN 20 NM RADIUS OF POINT 21.3 S / 41.7 E

(TWENTY ONE DECIMAL THREE DEGREES SOUTH AND  
FORTY ONE DECIMAL SEVEN DEGREES EAST)

MOVEMENT: EAST-SOUTH-EAST 9 KT

3.A DVORAK ANALYSIS: 3.5/3.5/D 0.5/6 H

4.A CENTRAL PRESSURE: 993 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 50 KT

RADIUS OF MAXIMUM WINDS (RMW): 28 KM

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

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

34 KT NE: 65 SE: 75 SW: 55 NW: 45

48 KT NE: 35 SE: 35 SW: 30 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: 2024/01/01 18 UTC: 21.5 S / 43.9 E, VENT MAX= 045 KT, MODERATE TROPICAL  
STORM

28 KT NE: 215 SE: 230 SW: 175 NW: 140

34 KT NE: 120 SE: 100 SW: 110 NW: 85

24H: 2024/01/02 06 UTC: 21.3 S / 45.5 E, VENT MAX= 030 KT, OVERLAND DEPRESSION

28 KT NE: 230 SE: 250 SW: 195 NW: 155

36H: 2024/01/02 18 UTC: 21.5 S / 47.5 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

48H: 2024/01/03 06 UTC: 22.1 S / 49.5 E, VENT MAX= 035 KT, MODERATE TROPICAL  
STORM

28 KT NE: 270 SE: 295 SW: 215 NW: 175

34 KT NE: 155 SE: 155 SW: 130 NW: 95

60H: 2024/01/03 18 UTC: 23.2 S / 51.1 E, VENT MAX= 040 KT, MODERATE TROPICAL  
STORM

28 KT NE: 285 SE: 315 SW: 220 NW: 185

34 KT NE: 165 SE: 165 SW: 130 NW: 95

72H: 2024/01/04 06 UTC: 24.1 S / 52.9 E, VENT MAX= 030 KT, POST-TROPICAL DEPRESSION  
28 KT NE: 305 SE: 335 SW: 230 NW: 205

2.B LONGER-RANGE OUTLOOK:

96H: 2024/01/05 06 UTC: 25.8 S / 56.8 E, VENT MAX= 020 KT, REMNANT LOW

2.C ADDITIONAL INFORMATION:

\*\*\*HAPPY NEW YEAR 2024 FROM RSMC LA REUNION\*\*\*

T=CI=3.5+

OVER THE LAST 6 HOURS, ALVARO HAS MAINTAINED A CURVED BAND CONFIGURATION, BUT IN THE LAST FEW MOMENTS, AN EYE HAS BEGUN TO APPEAR. SUBJECTIVE DVORAK ANALYSIS GIVES A CI OF 3.5+, BUT THIS ESTIMATE IS LIKELY TO EVOLVE RAPIDLY TO A VALUE CLOSER TO 4.0 OR EVEN HIGHER FOR THE NEXT BULLETIN. FOR THE TIME BEING, ALVARO HAS PASSED THE STAGE OF A STRONG TROPICAL STORM, WITH WINDS ESTIMATED AT 50KT OR EVEN 55KT.

NO CHANGE IN 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 LAND ON 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 REMAINING TO THE NORTH OF THE MASCAREIGNES 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, SLIGHTLY LIMITED BY MID-TROPOSPHERE SHEAR. THE INTENSITY FORECAST UP TO LANDFALL REMAINS RATHER UNCERTAIN, DEPENDING ON HOW QUICKLY THESE UNFAVORABLE CONDITIONS, WHICH ARE MORE LOCALIZED TO THE SOUTH OF THE SYSTEM, SET IN, BUT THE RSMC SCENARIO ARGUES FOR AN INTENSIFICATION UP TO LANDFALL. AFTER A CLASSIC WEAKENING INLAND, ALTHOUGH CONVECTIVE ACTIVITY SHOULD REMAIN SIGNIFICANT, THE VORTEX SHOULD RECONSOLIDATE LATE ON TUESDAY NIGHT AND EMERGE TO THE EAST OF MADAGASCAR THANKS TO GOOD SURFACE CONVERGENCE. A REINTENSIFICATION IS THEN POSSIBLE FOR ALMOST 24 HOURS, BUT THE INCREASE IN SHEAR SHOULD THEN CONTINUALLY WEAKEN ALVARO FROM WEDNESDAY EVENING.

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

- ONSET OF GALE-FORCE WINDS ON TOLIARA PROVINCE LIKELY FROM MIDDAY ON MONDAY THROUGH MONDAY NIGHT. POSSIBLE STORM FORCE WINDS VERY LOCALLY NEAR THE LANDFALL AREA.
- HEAVY RAIN AND RISK OF LOCAL FLOODING FROM MONDAY ON THE WEST COAST, EXTENDING TO THE EAST COAST (FIANARANTSOA PROVINCE) ON TUESDAY. ACCUMULATIONS OF 100-200MM DURING THE CROSSING EPISODE. IN THE MANAKARA AREA, RAINFALL COULD BE HEAVIER (LOCALLY 400MM) DUE TO THE CONVECTIVE ACTIVITY GENERATED BY THE CONVERGENCE OF FLOWS, BEFORE THE PASSAGE OF THE SYSTEM.
- SIGNIFICANT WAVE HEIGHTS OF 4 TO 6M NEAR THE IMPACT ZONE MONDAY BETWEEN 12 AND 18UTC.