

Figure S1. Number of trajectories per day averaged in different seasons during 2006: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, w 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over Banizoumbou. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

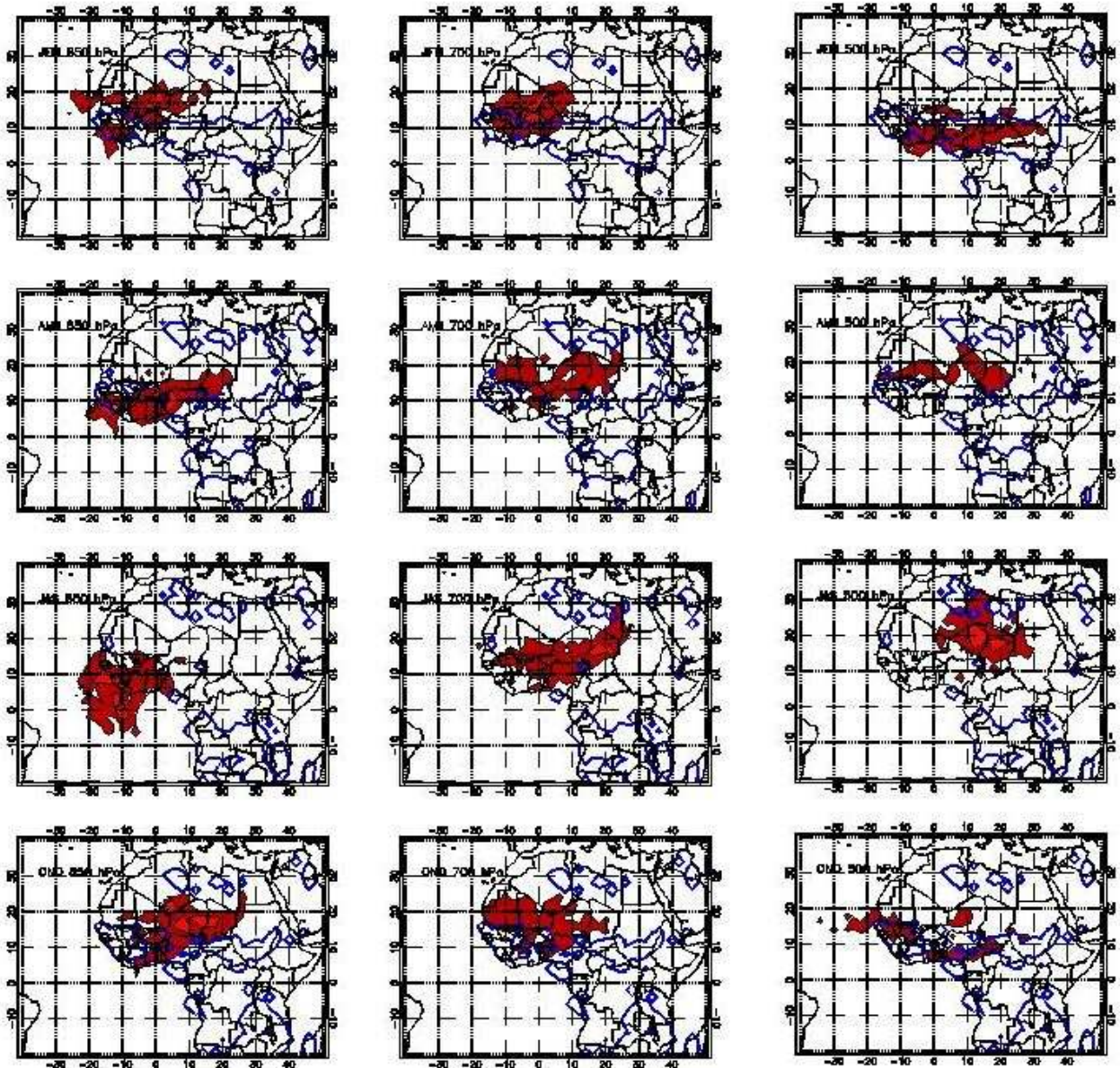


Figure S2. Number of trajectories per day averaged in different season during 2007: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over Cinzana. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

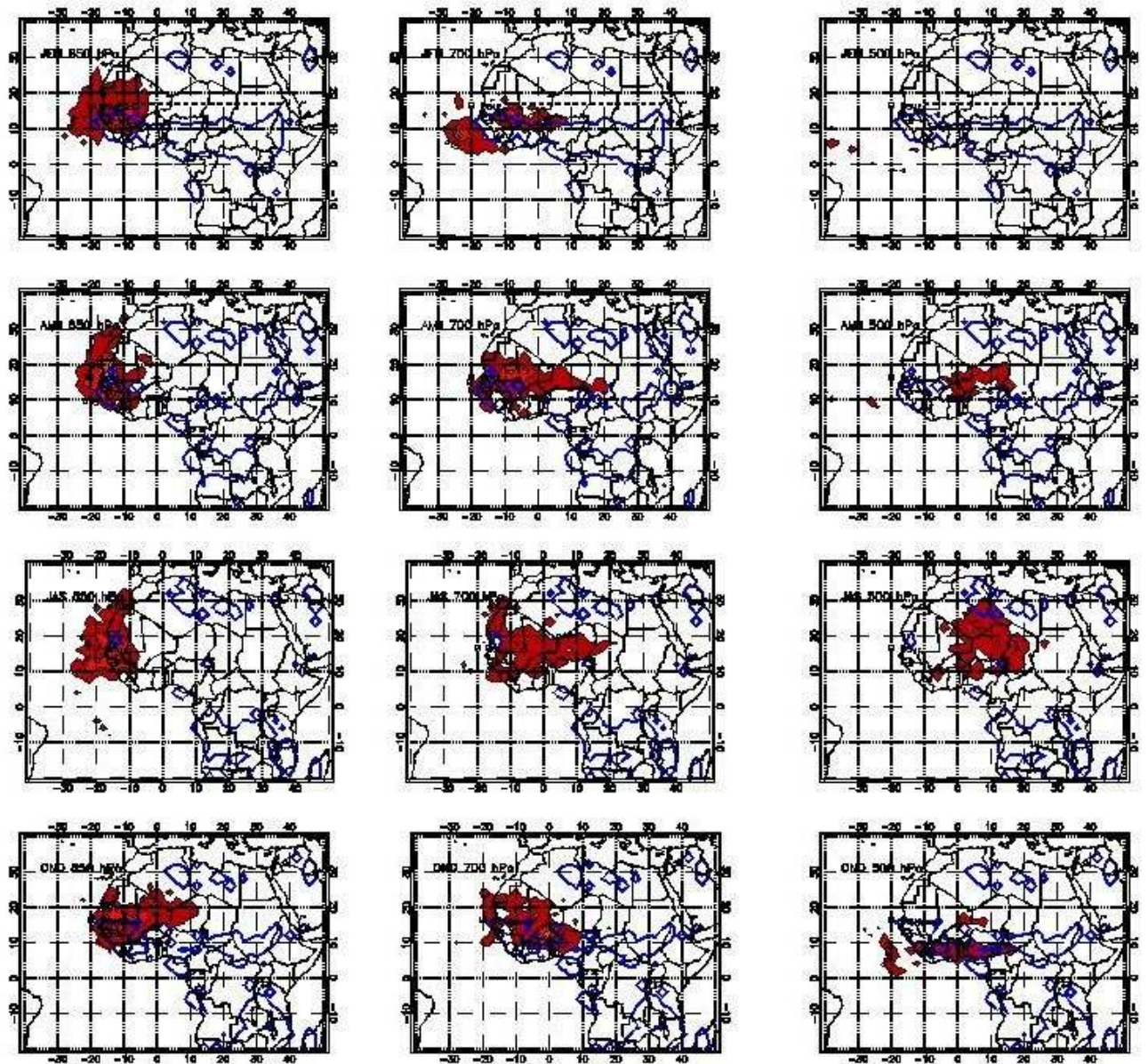


Figure S3. Number of trajectories per day averaged in different season during 2006: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over M'Bour. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

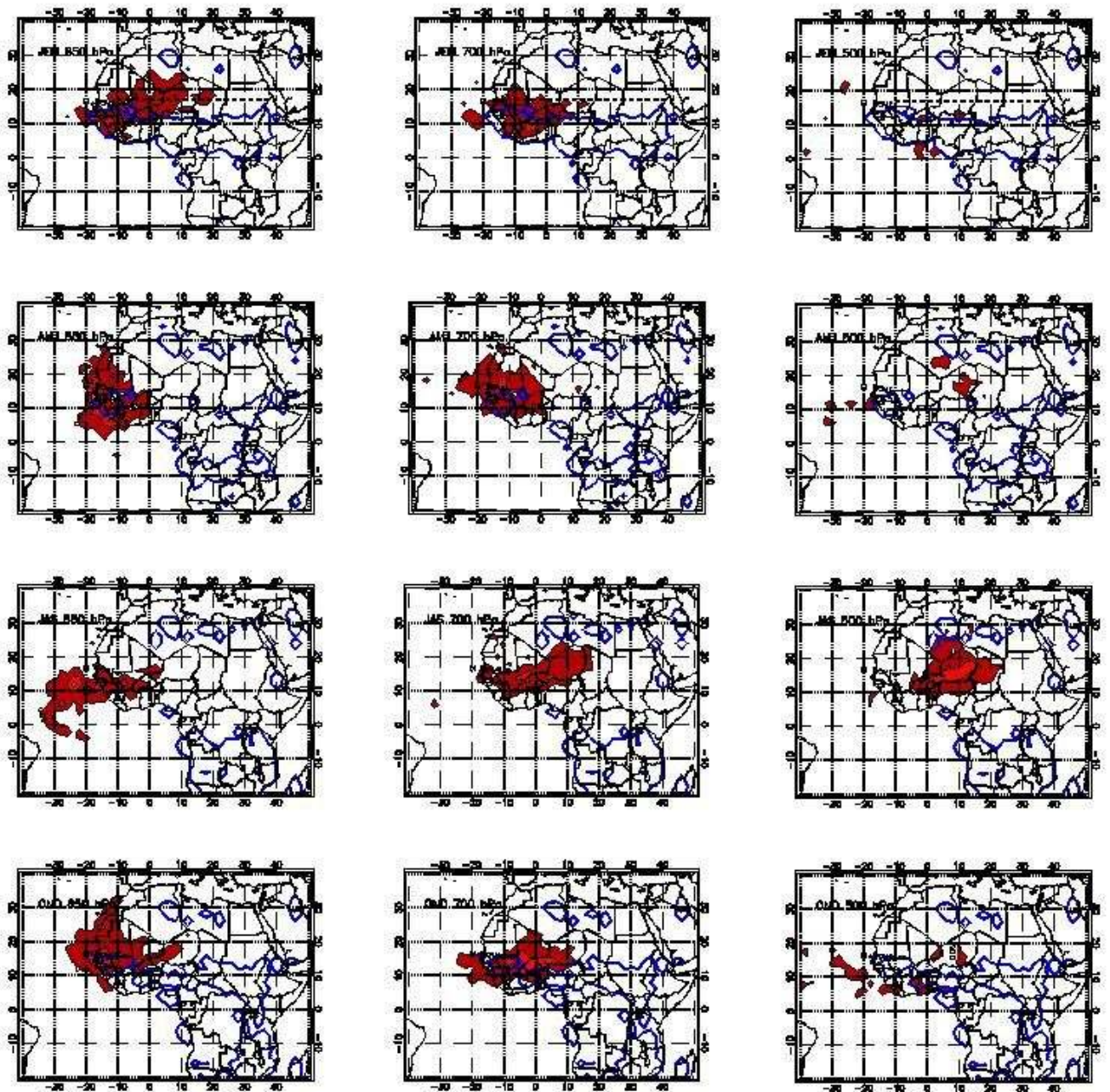


Figure S4. Number of trajectories per day averaged in different season during 2007: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over Banizoumbou. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

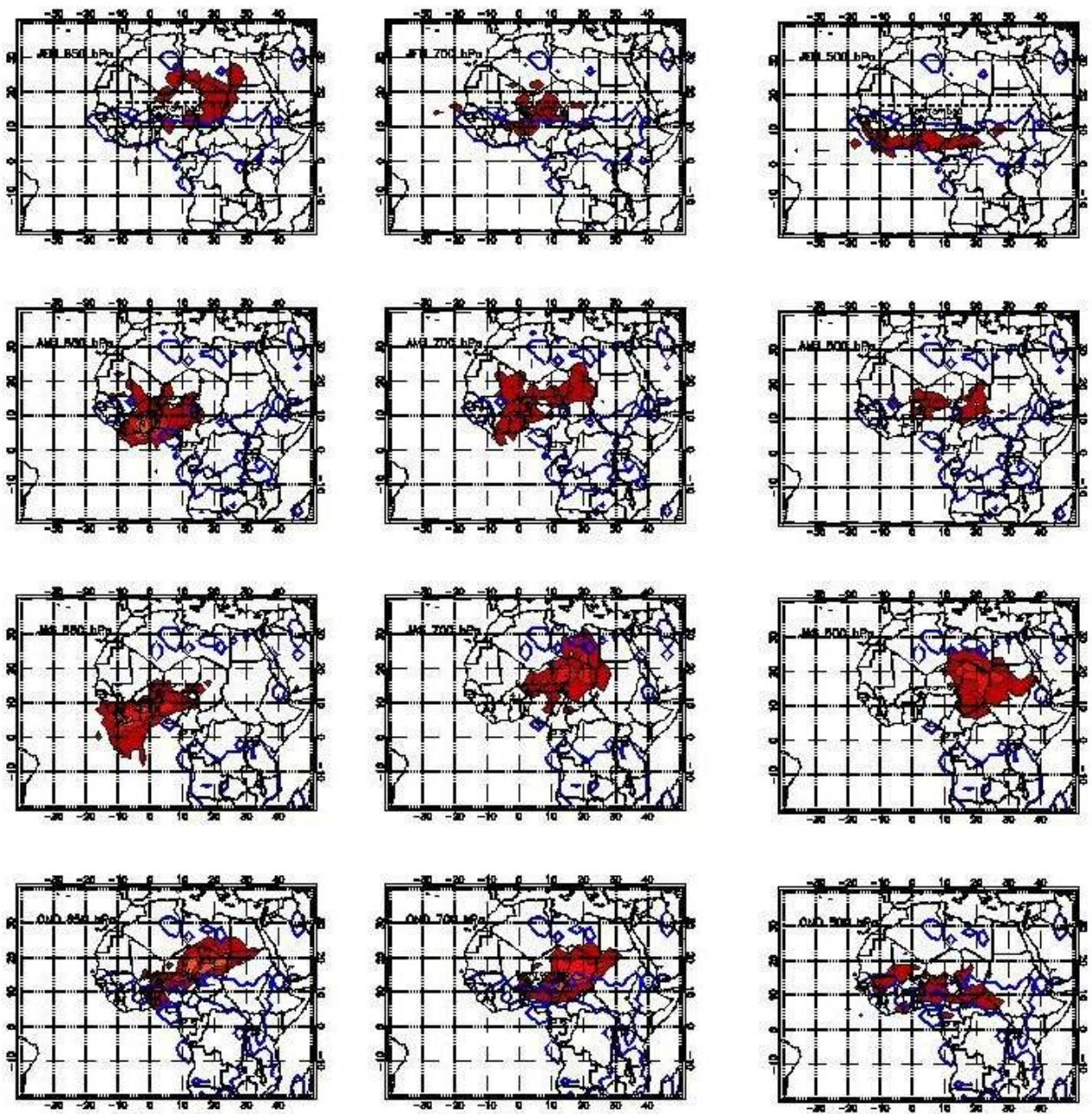


Figure S5. Number of trajectories per day averaged in different season during 2007: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over Cinzana. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

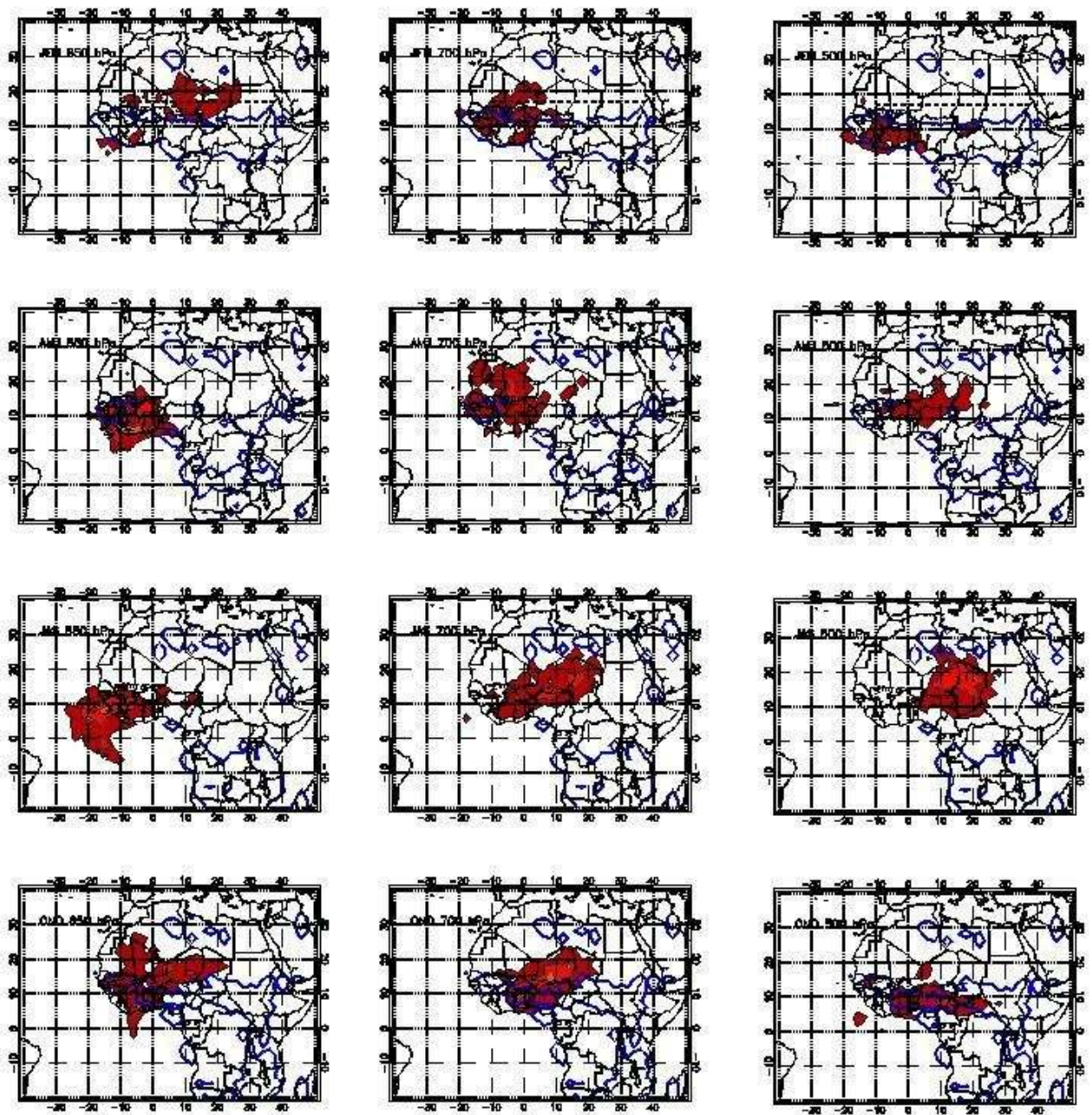


Figure S6. Number of trajectories per day averaged in different season during 2007: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over M'Bour. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

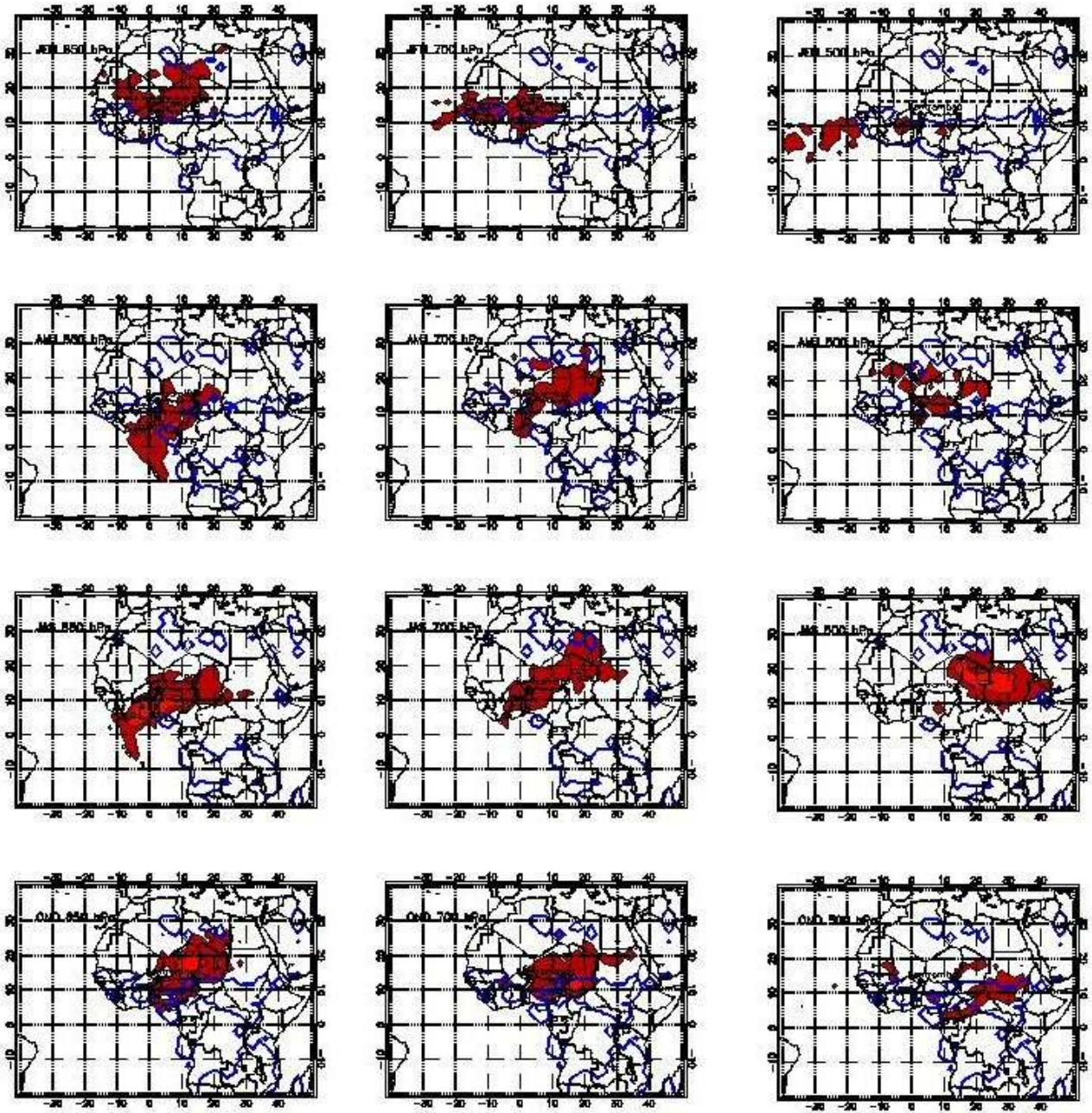


Figure S7. Number of trajectories per day averaged in different season during 2008: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over Banizoumbou. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.

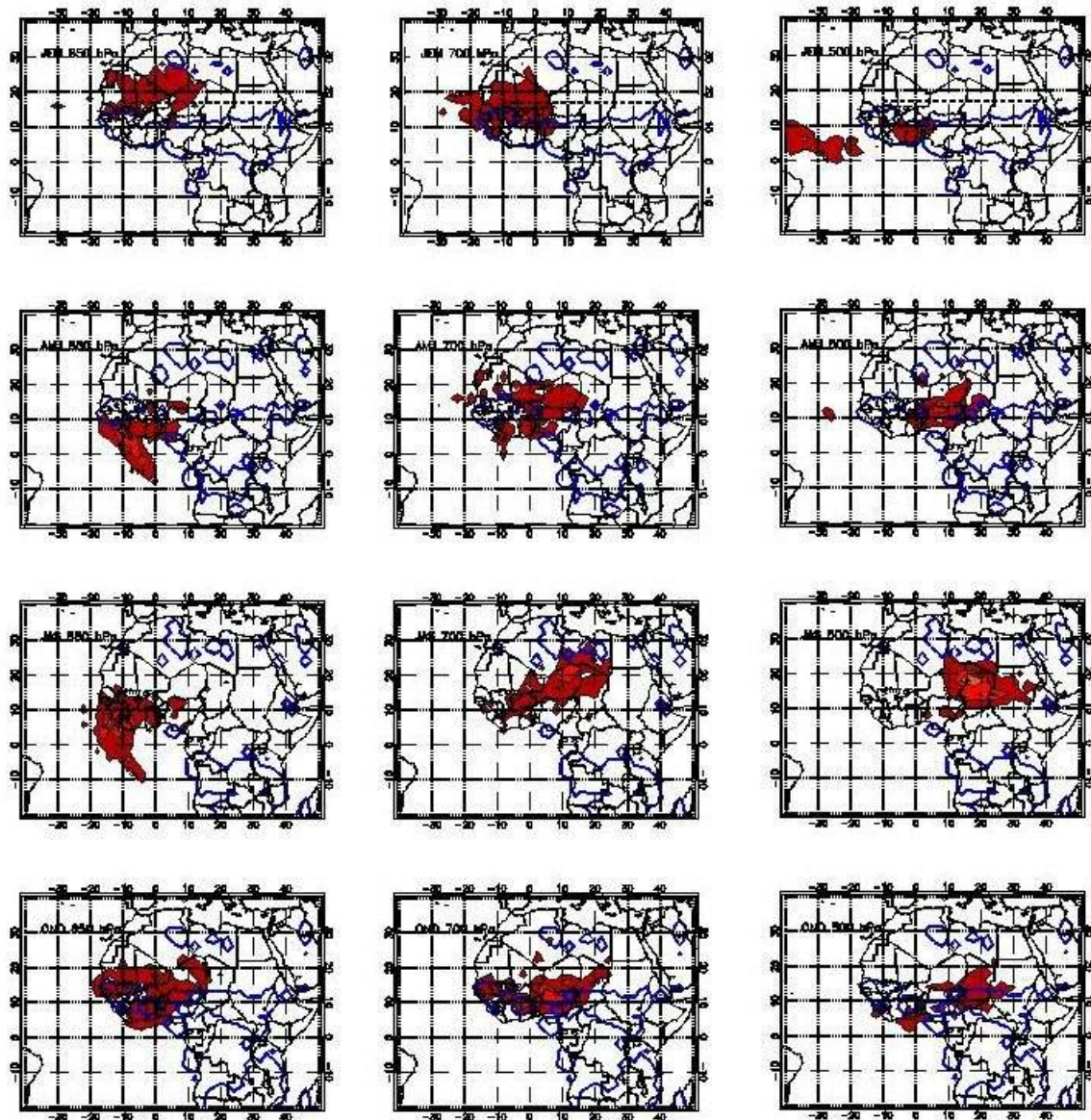


Figure S8. Number of trajectories per day averaged in different season during 2008: January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over in Cinzana. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.



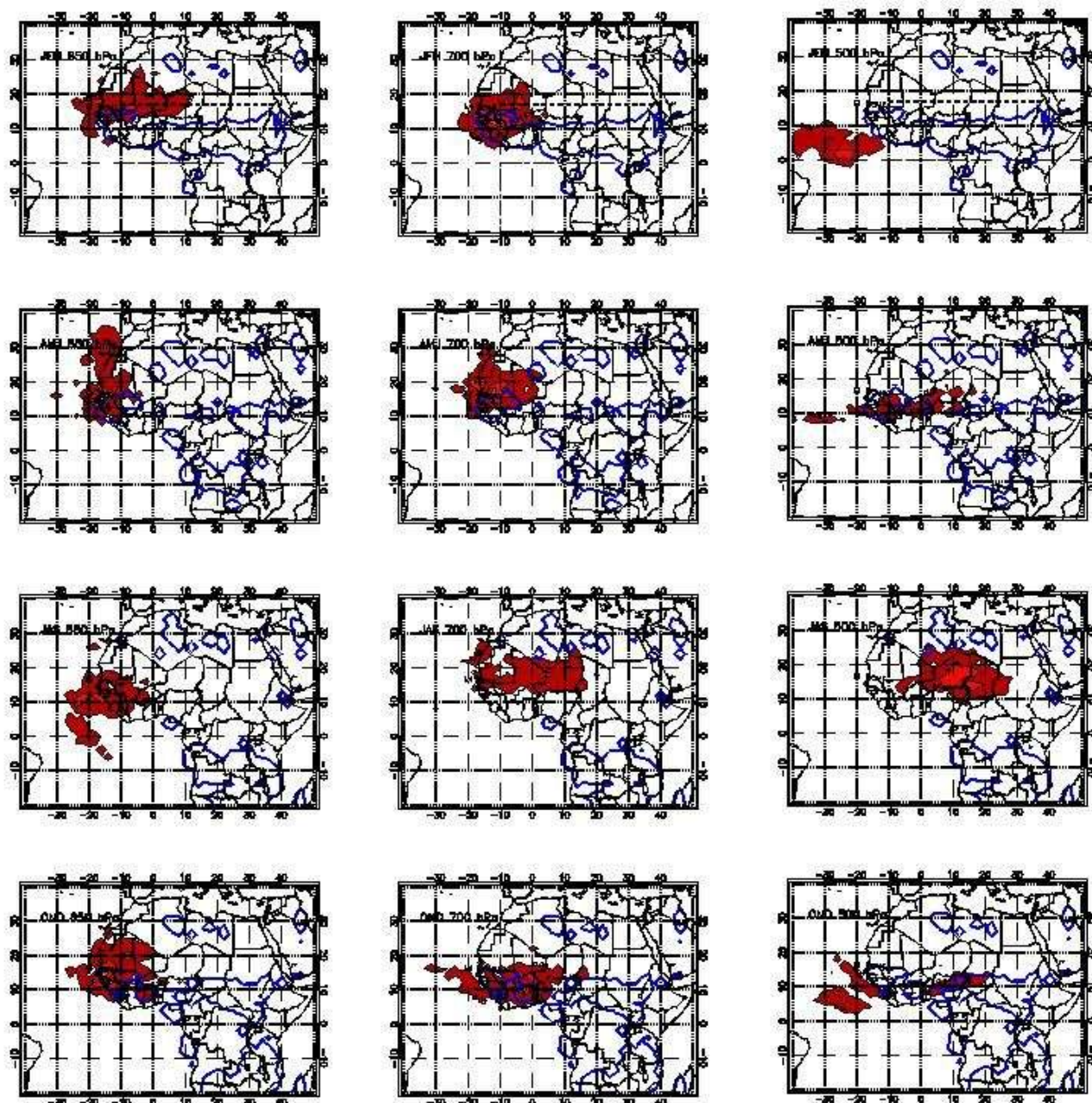


Figure S9. Number of trajectories per day averaged in different season during 2008 : January-February-March (JFM, row 1), April-May-June (AMJ, row 2), June-August-September (JAS, row 3), October-November-December (OND, row 4).

Trajectories are binned in a  $2^\circ$  lat-lon grid. Red contours represent the average position 4 to 6 days before arrival at 850 hPa (left column), 700 hPa ( middle column), 500 hPa (right column) over M'Bour. Blue contours indicates areas where forest fires observed from AATSR occurs. Fire-pixel are taken into account if their number is larger than 10 in the three-months period.