Grid points that show minimum  $T_b$  in the 5×5  $T_h$  matrix are found.

Each  $5\times5$  T<sub>b</sub> matrix is subtracted by the maximum T<sub>b</sub> value in the matrix and divided by the difference between maximum T<sub>b</sub> and minimum T<sub>b</sub>.

Standard deviations of the  $5\times5$  T<sub>b</sub> matrix in both directions are calculated and used to create upside down Gaussian matrix.

Calculate an absolute value of the difference between the  $T_b$  matrix and the upside down Gaussian matrix for 10 time steps. If the values are smaller than 10 for consecutive 10 time steps, then decrease in minimum  $T_b$  at channel 8 and 10 is calculated.

If the decreasing trend is either larger than -0.5 K/min for channel 8 or -1 K/min for channel 10, the middle and the neighboring 8 grid points are assigned as convective.