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LIST OF ABBREVIATIONS

\( \psi(\bullet) \): non linear activation function;

\( w \) and \( u \): weights and the input vectors for neural network

\( B \): threshold value

\( f_{pm} \): output of neural network.

\( i_d^*, i_q^* \): reference currents are in dq frame

\( i_a, i_b, i_c \): sensed supply current

\( i_a^*, i_b^*, i_c^* \): reference supply current

\( V_{dc} \): voltage across the electrolytic capacitor in DSTATCOM

\( i \): number of areas in power system under study

\( X_i \): input to the controller of \( i^{th} \) area

\( \Delta F \): change in frequency

\( B \): frequency bias constant

\( \Delta P_{tie} \): change in tie line power

\( \mu (k,i) \): normalized membership function of the fuzzy set,

\( a_{pi} \): width of membership function,

\( c_{pi} \): center of membership function,

\( l_{pi} \): give the shape of membership function,

\( P_{gen} \): generated power

\( P_{load} \): power consumed by the consumer load

\( w_{f1} \) and \( w_{f2} \): FTF weights

\( R \): Droop characteristic

\( T_t \): Turbine time constant

\( T_G \): Governor Time constant

\( K_a \): Amplifier gain

\( T_a \): Amplifier time constant

\( K_r \): Sensor gain

\( T_r \): Sensor time constant

\( T_3 \): Generator-field transient time constant
\( \Delta f \): Deviation in load frequency
\( \Delta V_t \): Deviation of terminal voltage
\( \Delta P_e \): Deviation of internal electrical power
\( \Delta V_f \): Deviation of field winding voltage
\( \Delta \delta \): Deviation of torque angle.