

## A Comparison between Artificial Neural Network Prediction Models for Coronal Hole Related High Speed Streams

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**Abstract :** Solar emissions have a high impact on the Earth's magnetic field, and the prediction of solar events is of high interest. Various techniques have been used in the prediction of solar wind using mathematical models, MHD models, and neural network (NN) models. This study investigates the coronal hole (CH) derived high-speed streams (HSSs) and their correlation to the CH area and create a neural network model to predict the HSSs. Two different algorithms were used to compare different models to find a model that best simulates the HSSs. A dataset of CH synoptic maps through Carrington rotations 1601 to 2185 along with Omni-data set solar wind speed averaged over the Carrington rotations is used, which covers Solar cycles (sc) 21, 22, 23, and most of 24.

**Keywords :** artificial neural network, coronal hole area, feed-forward neural network models, solar high speed streams

**Conference Title :** ICSPSW 2023 : International Conference on Solar Physics and Space Weather

**Conference Location :** Paris, France

**Conference Dates :** July 10-11, 2023