Prediction of the Tunnel Fire Flame Length by Hybrid Model of Neural Network and Genetic Algorithms

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Abstract : This paper demonstrates the applicability of Hybrid Neural Networks that combine with back propagation networks (BPN) and Genetic Algorithms (GAs) for predicting the flame length of tunnel fire A hybrid neural network model has been developed to predict the flame length of tunnel fire based parameters such as Fire Heat Release rate, air velocity, tunnel width, height and cross section area. The network has been trained with experimental data obtained from experimental work. The hybrid neural network model learned the relationship for predicting the flame length in just 3000 training epochs. After successful learning, the model predicted the flame length.