

Numerical Calculation Results of Pressure Variation in a Railway Tunnel

Yuki YAMAUCHI Sanetoshi SAITO Hiroshi KAJIYAMA

The air pressure in a tunnel changes significantly with time when a train is running in the tunnel at high speed. It is necessary to predict the maximum positive pressure or the maximum negative pressure when planning the speed-up of the Shinkansen or the installation of new equipment in tunnels. The maximum positive pressure or the maximum negative pressure depends on a number of parameters such as train speed, train length, tunnel length, the ratio of the cross-sectional area of the train to that of the tunnel, etc. This paper presents the maximum positive pressure and the maximum negative pressure under a variety of conditions by using a numerical calculation.