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A NEW VENTILATION METHOD FOR THE KAN-ETSU ROAD TUNNEL

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Summary

The Kan-etsu tunnel is the longest road tunnel now under construction. It forms part of the Kan-etsu highway crossing central Japan. The unique feature of this tunnel is that in spite of its considerable length it is fitted with a longitudinal ventilation system. This is the first time for a longitudinal system to have been used on a tunnel of this length and in-depth investigations have been carried out to study the statics of the system completed with vertical duct units and electrostatic dust collectors. To reach a conclusive assessment allowing the system to be adopted, it is also necessary to determine the dynamics of the system. For this purpose, our numerical simulation program has been developed as a means of modelling the non-steady state distribution of the pollutants occurring in the tunnel. The results of the simulation experiments and calculations have facilitated a clear understanding of the dynamics of ventilation and yielded valuable insights into the relative merits of the various control systems available.

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