BLAST WAVE PROPAGATION IN BRANCHED TUNNELS

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In our laboratory, blast wave propagation in tunnels and tunnel systems is investigated within the scope of a series of tests with small scale models. Blast wave propagation through branched tunnels will be treated in this paper.
Although general information on these phenomena are available, data related to specific changes of the parameters l/d and alpha (branching angle) are lacking, except for small pressure ratios.

The main purposes of this experimental test series was to get more infor-mation about the peak pressure ratios (damping factors), impulse and duration with branching angles other than 90 degree. The branching angles chosen were 30, 60, 90, 120 and 150 degree respectively with the same cross-section (square) before and after branching.
The side-on pressures were measured along the tunnel axis up to l/d about 10 after the branching. The shock strength varied from 2 to 10.

In addition, for comparison and scaling purposes, a model with a rough surface, but the same size, was investigated for the case of the 90 degree branch. A short description of the new experimental set-up will be given in the paper.