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**Sound generation by airflow in a pipe having a small internal cavity**

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Gas flow through corrugated pipes is known to excite strong acoustic resonances within the pipe. In an attempt to better understand the flow acoustic phenomena involved, we have investigated experimentally a short pipe (0.6m long and 0.04m diameter) having a single small (5mm long, 2.5mm deep) circumferential cavity. It was found that if placed close to the pipe's inflow end, strong acoustic resonances were generated. The experimental results were compared to a model based on describing-function theory. The model involves two transfer functions, one associated with the pipe resonator, and the other the shear layer above the cavity. These are combined to a feedback system. This model gives the frequencies generated and the acoustic pressure levels (to within a constant) for different flow velocities. Reasonable agreement was obtained between the experimental results and the model predictions.