

8.5.1. Aerodynamic noise

Earlier investigations of Lighthill and Powell already created the basics for later experiments of Baumann on control valves. Without dealing in more detail with theories, only the general noise phenomena will be mentioned here briefly. The causes of valve noise with compressible fluids are essentially developed through:

- Audible pressure fluctuations caused by the valve which are propagating downstream in the pipeline and which generate oscillations and which, in turn, are converted into audible airborne sound,
- Vehement fluid turbulence with corresponding friction losses in the pipeline and combined fittings automatically cause energy conversions and associated noise,
- Shock waves at hypercritical pressure drops cause intense noise and are propagating from the throttling area to downstream of the pipeline.