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Influence of the edge tone (mouth tone) on the sound of flue organ pipes as a function of pipe scaling

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The sound quality of an organ pipe is mainly influenced by the attack transients. This onset is first dominated by the edge tone, while later the pipe resonator will play a more important role. To understand the physics of a flue organ pipe, it is necessary to analyse the edge tone, the acoustic properties of the pipe resonator, the attack transient and the stationary sound of the pipe. Several pipe ranks have been investigated in the anechoic room of the Fraunhofer IBP: Nachthorn, Diapason, Gamba, Octave, Flute, Geigenprinzipal, Salizional. By the evaluation all physical effects contributing to the production of sound were taken into account. In the present paper about the physical effect of the edge tone on the production of the pipe sound will be reported.