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VSDWLDOKDSLQRIFRGHUWLVQWHLRUVORUHRYHUHDERUDWLRSUHVHVOVWKHDW

long study for of both acoustical and architectural domains in pursuit of prove for novelty a

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The effect of sound field blend has not yet been described in a mathematical way. Currently, it is determined with use of graphical methods. It was observed that in the halls with a central terrace configuration, in which there are a large number of irregular surfaces (especially shaped with the use of convex arches or modelled on Bézier curves), the 'mixing' of the acoustic field is visible. This phenomenon was shown of the diagram (Figure 4).

Architecture and Result

Aforementioned boundary of 1800 seats in the audience to ensure favorable acoustic parameters of the shoe-box shaped room is the average value resulting from the comparative analyzes of existing concert halls and statements contained in the literature and during scientific discussions. According to Toyota is the size of 1600 people [10] and according to Barron-2000 people [3]. See Tables 1 and 2

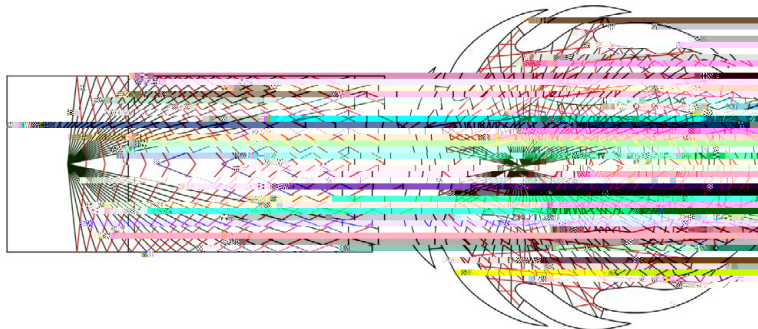


Figure 4: A 3D acoustic ray-tracing diagram showing sound paths in a concert hall. The diagram illustrates the complex interaction of sound waves reflecting off the irregular surfaces of the hall, demonstrating the 'mixing' of the acoustic field.

No.	Name of the room, city	Year of erection	No. of seating
1	Stadt-Casino, Basel	1779	1448
2	S [] : ^: c @ x ~ • É: Ó ^: i }	1821	1507/1677
3	Ö! [• • ^: Á V [] @ x ^ • x x É: Z ~ i & @	1856 (1930 refurbished)	1546
4	Ö! [• • ^: Á T ~ • Á \ Ç ^: Á i } • • x x É: X Á ^ } x	1870	1680
5	Royal Liverpool Philharmonic, Liverpool	1939	1767
6	Herkulesaal, Monachium	1953	1287
7	Royal 0 Td0 1 444.4278 21939	1767	

6S1 gs/TT1 1 4d.065 0 T15105100 1 0.FI L538 Td(4)Tj/C(6)Tj13. -1.538 Td(5)Tj145103.6T1514004



of spaciousness and intimacy in room and proper blend of the sound

of volume in vineyard configuration, configuration should be used for halls containing more than 1800 people, benefiting from significant reduction of the excessive reverberation time, in comparison with shoe-box shape rooms of the equivalent capacity. Also favoring in the room is the central stage location, which allows seating more audience members near the sound source. It also enables obtaining a large surface of audience on which the direct sound is mixed with loudst lateral reflection, propagated through short transmittance way. Thus, parameters of acoustical field, like: loudness, clarity, ITDG can be optimized, even in large capacity rooms. The geometrical shape of the vineyard configuration rooms favours: reduction of risk in uttering echo occurrence, optimization of IACC and overall feeling