

# Agenda

## TECHNICAL COMMITTEE ON ARCHITECTURAL ACOUSTICS (TCAA)

178<sup>th</sup> Meeting of the Acoustical Society of America  
San Diego, CA

Tuesday, Dec 3, 2019

8:00 PM

Windsor

Chair: **Ana Jaramillo**

Chair-Elect: **David Woolworth**

In Attendance: **83**

***DISCUSSION NOTES IN BOLD ITALIC***

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## Section One: Welcome and Acknowledgments

### I. Welcome and Introductions

- Pass Attendance Sheet
- Attendees are encouraged to become TCAA members if they are not already.
- New attendees' introductions
- Please limit clapping to expedite this meeting
- Introduction to TCAA

### II. Previous Minutes

- Approval of previous minutes
  - Previous minutes (Louisville).
  - Reminder: TCAA Meeting Agenda and Minutes are published on the TCAA website <http://tcaaasa.org>

### III. Acknowledgements

- **Peter Gerstoft** (Meeting Chair)
- **Aaron M. Thode** (Technical Program Chair)
- **Shane Kanter & Ben Bridgewater** (TCAA TPOs)
- **Session Chairs:** Siu Kit Lau, Andy Chung, Matt Golden, Ben Shafer, Laura Brill, Michael Vorländer, Brian Corry, Kaitlyn Hunt, Joseph Keefe, David Manley, Gary

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Siebein, Hyun Paek, Keely Siebein, Jennifer Lentz, Ken Good, Brigitte Schulte-Fortkamp, Bennet Brooks, Matthew Byrne, Kainam Wong

- **Presenters:** 73 papers presented in 7 special sessions
- **Sean Browne** (Webmaster)

### IV. Congratulations!

- **TCAA Student Paper Award** – Results from Louisville
  - 1st Place: Michael Hoeft  
*“Broadband design of multilayer micro-slit panel absorbers for improved transparency using Bayesian inference”*
  - 2nd Place: Kieren Smith  
*“Characterization of restaurant soundscapes based on logged sound levels and occupancy measurements”*
- **New Fellow** - Jonas Braasch
  - For interdisciplinary contributions to musical acoustics and psychoacoustics of spatial audio technology
- **Laymon N. Miller Award for Excellence in Acoustical Consulting**
  - Tony Hoover
  - (see appendix)

### V. Chair’s Report

1. In Memoriam:  
Bill Cavanaugh  
(see appendix)
2. Michael Moloney, CEO AIP  
ASA is one of the founding members.
3. Chris Struck, ASACOS  
New pricing, no more free standards  
Acoustics Today article Spring 2020: New ASA Standards Business Model
4. James Lynch, JASA Editor-in-Chief
  - a. Special issues are mostly increasing impact factor
  - b. Reflections  
Tony Hoover, Brian Katz, Francesco Martellotta, S. K. Tang, Michael Vorländer, Ning Xiang were involved to establish the list.  
(See list of papers in appendix)
  - c. New headings in JASA: computational acoustics, acoustic standards and practice

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- d. JASA-EI will be a separate open access publication at the end of 2020.  
Publication going up from \$500 to \$900, an extra page and extra figure
5. Photography during sessions  
Current policy is no photography without ASA permission.  
What do we want, how to implement? (optional to presenter, general, other)  
**Summary of discussion:**
  - 1) **How do we deal with COPYRIGHT of images taken during a presentation?**
  - 2) **What is the LIABILITY for ASA or the presenter for images taken during a presentation?**
  - 3) **Proposed solution: no photo unless expressly permitted by author, also can request slides or provide link.**
6. Strategic Plan 2019-2022
  - Task Force A - Identification and Promotion of Emerging Scientific/Technical Areas (Adam Maxwell [amax38@uw.edu](mailto:amax38@uw.edu))
    - 1) What new technical/scientific areas should ASA pursue in the **no suggestions**
    - 2) Which older areas that now receive minimal attention should we revisit, and in what degree?  
**Absorption of gypsum board**
    - 3) Do some of our traditional areas need assistance to be more vital in the future?  
**AI for AA (covered in SP)**
  - b. Task Force B - Better Engagement of Industry and Practitioners (Eric L. Reuter [ereuter@reuterassociates.com](mailto:ereuter@reuterassociates.com))
    - 1) Special sessions during the meetings that are geared toward education of fundamentals. **Ideas welcome**
    - 2) Fellows study (Diane Kewley-Port – Tony Hoover)  
60% members are practitioners and 40% academia and students  
60% fellows are academics and 40% practitioners  
Guidelines and instructions are being revised to promote equity
  - c. Task Force C - Improved Communications and Public Relations (Michelle C. Vigeant [mvcv3@psu.edu](mailto:mvcv3@psu.edu))
  - d. Task Force D - Member Engagement Outside of Meetings (Christopher M. Jasinski [JASINSKI@hartford.edu](mailto:JASINSKI@hartford.edu))
    - 1) 7000 members. 1000 at meetings. What can we offer between meetings.  
Regional chapters, other ideas? **check on statistics of members in regards to engagement (data mining), remote viewing of streaming. In between meetings you can have a forum (can this be combined with the media response initiative. Attendance is pretty steady, so this is more about increasing the value of meetings?**

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### 7. Meetings

- a. ASA School in Chicago
- b. Cancun: No need for co-chairs  
How many people plan to attend? **43**
- c. Spring 2021 not Portland Seattle likely
- d. Sydney:
  - 1) Down-under fund for students. 100 \$1000 scholarships for students from leftover technical initiative money, approved by Technical Council
  - 2) Different format. Keynote speakers, co-chairs, length of presentations
- e. Cost of hotels is going up, not only for rooms but for conference space

### 8. International Year of Sound

- a. Wikipedia edit effort – workshop in Chicago in May. Editing through 2020, keeping track in dashboard. Wednesday 8:35 Carousel 3aED (Bill Murphy).
- b. Acoustics Today will have the calendar of events in the next issue
- c. There are resources for chapters to do activities
- d. Invited speaker series (contact: Keeta Jones)
- e. Keeta/Vic chair ad-hoc committee (Brigitte, Bennet are part of this group)

### 9. Outreach

More volunteers for outreach session for 8<sup>th</sup> graders. Wednesday morning. 8:30 – 12:30 in Carousel. Run a station. Get there by 9.

### 10. Comments on this meeting

***~1200 attendees***  
***hotel location not great***  
***christmas music***  
***expensive***  
***thanksgiving flight costs (ouch)***  
***thanksgiving time cut short (scheduling)***  
***noisy rooms-guests, flyovers and help staff***  
***internet is poor***  
***san diego is nice***  
***learned a lot***

### 11. TCAA Demographics

## Section Two: Committee and Subcommittee Reports

### I. ASA Committee Reports

#### 1. Membership (Tony Hoover)

- Continued good progress with Associates and former Students applying for Full Membership. Application is easier than ever, on the ASA website: <https://acousticalsociety.org/new-membership/#gi> >> Transfer to full Membership (click on link for application form)
- Per the 22 August 2019 list of applicants to Full Membership:  
-total 43 applicants, 15 list AA as their prime TC => 35% of applicants are TCAA!! (plus 5 more TCAA in October!) Excellent!

#### 2. JASA & JASA-EL

- a. JASA Associate Editor (**Michael Vorländer, Brian Katz, Francesco Martellotta, Ning Xiang, Lauri Savioja, Frank Sgard**)
- b. JASA Coordinating Editor (**Ning Xiang**)
- c. JASA-EL Associate Editor (**Ning Xiang**)

#### 3. POMA - Proceedings of Meetings on Acoustics (Lauren Ronsse)

Proceedings of Meetings on Acoustics (POMA) is an editor-reviewed, open-access, online journal published by the Acoustical Society of America (ASA). Articles originate as papers presented at semiannual ASA meetings or at other cosponsored meetings. Both researchers and practitioners are encouraged to submit manuscripts to POMA. Authors are especially encouraged to use POMA for better archiving of special sessions presented at ASA meetings.

#### 4. Women in Acoustics (Lauren Ronsse)

- Everyone is encouraged to attend the Women in Acoustics luncheon held at each meeting.
- WIA sponsored funding opportunities:
  - The Young Investigator Travel Grant is intended to help with travel costs associated with presenting a paper at the meetings. Young professionals who have completed their doctorate in the past five years are eligible to apply if they plan to present a paper at an ASA meeting, are not currently students, and have not previously received the award.
  - The Dependent Care Subsidy is intended to help with dependent care costs associated with attending an ASA meeting. Meeting attendees are eligible to apply if they plan to present a paper at an ASA meeting or hold a leadership position in ASA.

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- Please see the call for papers for more details on these opportunities for future meetings.

### 5. College of Fellows (Tony Hoover)

- Undergraduate students' registration fees are \$25 for the San Diego meeting, and will remain \$25 for the foreseeable future.
- Two email blasts with information, poster (see appendix), and letter from ASA President Vic Sparrow went out to local professors and deans at colleges & universities in the San Diego area that are potentially related to acoustics, advertising the ASA meeting, encouraging attendance by any/all students that may be interested. Thanks to Asis Lopez/Student rep to CoF, and to Keeta Jones/ASA Education and Outreach Coordinator....and to Elaine!
- CoF invites any/all Fellows to join the Steering Committee.
- San Diego Society Luncheon and Lecture Hosted by CoF (Thursday, Noon):  
From Human "Computer" to Sonic Boom Minimization! Dr. Christine Darden is an American mathematician, data analyst, and aeronautical engineer who devoted much of her 40-year career in aerodynamics at NASA to researching supersonic flight and sonic booms.  
Tickets are again sold out.  
Thanks to TCAA members who have volunteered to accompany the ticket-winning students to the Luncheon!

### 6. Regional & Student Chapters (Ken Good)

Chapters Meeting Wednesday, 7:00am

Chapters are a great way to bring the National meeting home and engage folks who could or would not attend the national meeting. They also serve as opportunities to coordinate with other organizations such as AIA, AES as example. Last "Chapters" consider how your chapter can support "Strategic Initiative B" (Better Engagement of Industry and Practitioners).

Exciting news! - Chapter for Spanish Speaking acoustician in progress.

### 7. ASA Jam (Tony Hoover)

Wednesday evening, 8pm to midnight, here in Hotel Del Coronado (Regent/Upper Grande Hall)

Many thanks to San Diego Jam organizer, Mike Bianco!

Thanks to our volunteer mix engineers

### 8. Medals and Awards (Ron Freiheit)

TCAA will be eligible for a **Silver Award** recipient in **2020**.

Nominations must be submitted no later than 5 weeks before next year's Spring Meeting (by the end of March 2020).

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9. **Standards** (Nicolas Williams? ) soliciting standards sponsors
10. **Student Council** (Mallory Morgan)
11. **Panel on Public Policy** (Eric Reuter) wait till next week
12. **Education** (Jim Degrandis) upcoming industrial interface
13. **Tutorials, Short Courses, Hot Topics** (Eddie Lau)
14. **ASA Foundation Fund** (Carl Rosenberg)
15. **ASA Books Committee** (Robin Glosemeyer) music facilities book is underway (Shane Kanter).
16. **Archives and History**

## II. TCAA Subcommittee Reports

1. **Speech Privacy** (Ken Good)

Our fifth meeting will be Wednesday, 5:45pm. We continue work around terminology, background sound minimums and history.

  - A special session we held at the Louisville meeting with many great and diverse papers.
  - Friday: 5aAA: How Does Speech Perception Work: A Tutorial and Panel Discussion for Architectural Speech Privacy (Cosponsor: PP/SC/ASACOS)
  - The Spring 2020 meeting (Chicago) will have a session: Acoustics in Healthcare: Guidelines, Human Response, and the Way Forward
  - We have a close collaboration with work related work at ASTM, & ASHRAE.
  - WG 44: (ASA/ANSI S12.70 Criteria for Evaluating Speech Privacy in Health Care Facilities) met in Louisville and (Today) Tuesday December 3rd. The WG is working on address Open Plan speech privacy in Healthcare and changes to better complement/influence the FGI Guidelines.
2. **AIA/CEU Course** (Ken Good)

This course continues to grow as a valuable outreach, educational & business development tool. By serving your local architecture firms and others providing an opportunity to build relationships and educate on the importance of acoustics in their design and planning. To qualify as a presenter you must be:

  - 1) A member of ASA
  - 2) A member of TCAA
  - 3) Must have completed the presenter's course.

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A presenter's course was held at the Minneapolis meeting and will be at the spring 2020 Chicago Meeting

3. **Green Building Acoustics** (Eddie Lau)
4. **Concert Hall Research Group** (Robin Glosemeyer) thanks to Laura Brill,
5. **Healthcare Acoustics Subcommittee** (Gary Madaras)
6. **Classroom Acoustics** (Dave Woolworth) ramping up for Chicago new members . S12.60 part 4 released. Greg Tocci is working on part 3
7. **Newman Student Award Fund Update** (Ian Hoffman, Robin Glosemeyer, Michelle Vigeant)
8. **Student Design Competition** (Michelle Vigeant Robin Glosemeyer).



## Section Three: New Business and Meeting Planning

### I. New Business

### II. Planning of Future Meetings

- **179<sup>th</sup> Meeting**, Chicago May 11-15, 2020
  - **Special Sessions**
    1. Session in Memory of Jiri Tichy (Joint with: Engineering Acoustics, Noise, Signal Processing in Acoustics) - Vic Sparrow, Gary W. Elko
    2. Recording and Production Spaces (Joint with: ASA Committee on Standards) - Ronald Eligator
    3. Courts and Municipal Buildings (Joint with: ASA Committee on Standards, Noise) - Jessica Clements
    4. AIA CEU Presenters Course Training Session - Tony Hoover, Bennett Brooks, Ken Good
    5. New Developments in Classroom Acoustics (Joint with: ASA Committee on Standards, Noise, Education in Acoustics, Speech Communication) - David Lubman, David Woolworth, Laura Brill
    6. Acoustics in Healthcare: Guidelines, Human Response, and the Way Forward (Joint with: ASA Committee on Standards, Noise, Speech Communication) - Jay Bliefnick, Ken Good
    7. Session in Honor of William J. Cavanaugh - Tony Hoover
    8. A Day in the Life of a Building in Use (Joint with: ASA Committee on Standards, Noise) - Greg Miller
    9. Pritzker Pavilion Tour
    10. Riverbank Labs Tour
    11. ***Tour of Shure Incorporated***
  
- **180<sup>th</sup> Meeting**, Cancun, Mexico: Fall 2020
  - **Finalize Special Sessions**
    1. Archaeoacoustics (David Lubman) (**tour**)
    2. Sound transmission and impact noise in buildings (Matt Golden)
    3. Stage Acoustics (Greg Miller, Ian Hoffman)
    4. Acoustics of Coupled Spaces (Michael Vorländer, Ning Xiang)
    5. Heritage **historical?** acoustic reconstructions (Brian Katz, Sunyoung Kim) determine if **join with archeoacoustics?**
    6. Techniques and Methods of measuring Absorption in a reverberant chamber (Ron Sauro, **Melanie Nolan**)
    7. The rapid advancements in measuring diffusion (diffraction) in today's world (Ron Sauro, Jim Degrandis)
    8. Tools for room acoustical design (Wolfgang Ahnert, Ana Jaramillo)

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### 9. IYS potpourri

- **180<sup>th</sup> Meeting**, Seattle: Spring 2021
  - **Preliminary Special Sessions**
    1. Architectural Acoustics and Audio: Even Better Than the Real Thing (Hoover/Case) *moved from Chicago*
    2. *Brigitte Schulte Fortcamp Restaurant acoustics*
    3. *shane Kanter acoustics of music education facilities*
    4. *Robin brian corey opera performance facilities and pits*
    5. *Russ Cooper Tours*
    6. *Indoor environmental quality (eric rueter)*
    - 7.
- **Future Meetings**, no action required:
  - 182<sup>nd</sup> Meeting, Sydney, Australia: Fall 2021

### III. Technical Initiatives – Reports and Renewals

- Note: Technical Initiatives are meant to inspire and support innovative ideas. Suggestions for appropriate investments in outreach, education, and other ASA activities are encouraged. TIs do not automatically roll over.
- **Discretionary Funds:**
  - \$5000 annually, can be used to assist Invited Speakers, Student Paper Awards
  - AIA CEU ongoing

**\$2000 proposed for travel and lodging for members of Bill Cavanaugh's family for our memorial session  
afternoon session to gather after**

Deep learning standard acoustical configurations discussed.  
Subcommittee and discussions to develop.

### Meeting Adjournment

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## Appendix

### I. William J. Cavanaugh

June 27, 1929 ~ July 14, 2019 (age 90)

#### Obituary

William J Cavanaugh, Acoustical Society of American (ASA) Fellow and 2019 Gold Medal recipient died July 14, 2019 shortly after celebrating his 90th birthday. He was an internationally recognized leader in his field of Architectural Acoustics and consulting for 60 years.

Born and raised in Boston, William Joseph was the second child of seven born to Francis X Cavanaugh and Catherine M (Hennessey). He graduated Boston English "the first public high school in America" in 1946 with honors. In 1951, Bill received his Bachelor of Architecture degree from Massachusetts Institute of Technology and was awarded the American Institute of Architects Student Medal.

After graduation, Bill was commissioned 2nd Lt and immediately ordered to active duty where he served as unit training and staff officer with the 6th Armored Div. and Army Corp of Engineers at Ft Leonard Wood, Missouri for the duration of the Korean War. In 1953, shortly before the armistice, Bill married his love, Ginny (Louise Virginia Huff), a US Army Air Force WWII veteran whom he met as a student while at MIT. Ginny passed away in November of 2010. Bill remained in US Army Reserves, retiring at the rank of full Colonel in 1982. He was awarded Meritorious Service Medal for 31 years of continuous service.

After his service in 1954 he joined his MIT professor and inspirational mentor Bob Newman at the trailblazing acoustical firm of Bolt, Beranek & Newman (BBN). Along with Dr. Leo Beranek and Dick Bolt he participated in implementing ground breaking and modern techniques in noise & vibration control, concert hall design and building acoustics that remain as standards today. During this time "Cav" co-authored a collection of papers on "Speech Privacy in Buildings" which was selected as benchmark papers in Architectural Acoustics in 1962. In 1975 he co-founded Cavanaugh Tocci Associates with Gregory Tocci. For 40 years CTA continues to be recognized worldwide as experts in acoustical consulting. Bill was principal author along with Tocci on the first and second edition of the book "Architectural Acoustics: Principals and Practice."

In addition to the ASA 2019 Gold Medal, Bill's practice, leadership and advancement of Acoustical Consulting was recognized with Laymon Miller Award 2015, Robert B Newman award 2011, Walter Clement Sabine award 2006, and Paul Boner Medal 1983. Bill was always eager to share his knowledge and experience by teaching and lecturing at prestigious institutions. He encouraged his associates and

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contemporaries to do as well. Harvard University School of Public Health, MIT, Rhode Island School of Design, Rodger Williams College, and the Boston Architectural Center, are where he inspired hundreds students involved in learning practical application of principles of architectural acoustics. A dedicated ASA fellow, he developed and chaired many executive and technical committees on acoustics for decades. Hundreds of lectures, technical papers and publications on Acoustics are attributed to William J Cavanaugh. He was president the National Council of Acoustical Consultants and member of various professional Acoustical and engineering organizations.

Bill was generous with his time and counsel to his colleagues, family and friends. He lived by his selfless creed that much can be accomplished if no one cares who gets the credit. Bill's faith in God sustained his positive attitude in all his professional and personal endeavors. He practiced his faith serving his community and at Saint Theresa's of Lisieux Parish in Sherborn. He enjoyed many rounds of golf, traveling with friends and family, he found joy in listening and singing to music and family gatherings. It is what he called the joys of life.

In addition to his loving wife Louise Virginia (Ginny), Bill was predeceased by his son Lt. William J. Cavanaugh Jr. USAF who died in 1982 while on active duty. Also his brothers Francis, Joseph and wife Lois, Thomas, his little sister Catherine M. Campbell and sister in law Claire (Hamrock). He was survived by four of his five children, daughters Joan M. Cavanaugh (Beth Miller) of Belmont; Lauren C. Alves (Dennis ) of Ashland; and sons Mark A Cavanaugh of Salem, Dr. John W. Cavanaugh (Lillea Cameron) of Columbus, Ohio. Grandchildren Mathew R. Hoover of Boston, Catherine V. Hoover-Camera of Woburn, Jonathan W. Alves (Lauren) of Boston, Josef M. Alves (Megan) of Boston, Jared D. Alves (Maxime Devilliers) of Boston, Andrew W. Cavanaugh of Peabody, Raquel Brown (Andy) of Wapakoneta, Ohio, Natalia Gusching (Mike) of Savannah, GA, Wesley Vargas of Columbus, Ohio; Great Grandchildren Milo and Rowan Camera of Woburn, Sofia and Benjamin Brown of Wapakoneta, Ohio, Gabriela and Eva Gusching of Savannah, GA, and his newborn namesake William Lyons Alves born on July 7th in Boston. His brothers James (Carol) of Hingham and Deacon Michael of Braintree. The family is grateful for the excellent care given to Bill by his caretaker Vivian and his friends at Fairview Estates in Hopkinton.

**II. The Laymon N. Miller Award** is presented annually to an individual who has practiced acoustical consulting in an exemplary manner over a sustained period of time to improve acoustical environments in and around buildings, transportation systems, work places, recreational and other occupied spaces such that the quality of life for citizens and communities is significantly enhanced.

Tony's contributions include his outstanding career in architectural acoustics, and building and environmental noise. In a career of nearly four decades to date, Tony

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has been responsible for the design, testing and implementation of acoustics and noise control designs in over 2,000 projects for commercial and institutional buildings. Tony has influenced acoustics standards such as ANSI S12.60, and developed courses for the Acoustical Society of America (ASA) and the American Institute of Architects (AIA). Tony has served NCAC in many capacities including as president, and on various committees. The above barely scratches the surface of Tony's contributions to NCAC, ASA and the acoustical consulting profession.

III.



**YOU ARE INVITED!**  
Fall 2019 MEETING  
**ACOUSTICAL SOCIETY OF AMERICA**

WHEN	WHERE
Monday, Dec 2 <sup>nd</sup> THROUGH Friday, Dec 6 <sup>th</sup>	Hotel del Coronado San Diego, CA

Throughout the week, sessions on music, architecture, biology, noise, speech, engineering, ocean acoustics, signal processing, hearing, physiological acoustics and more!

**STUDENT PRE-REGISTRATION**  
by 28 October 2019

All Undergraduate Students: \$25  
Graduate Student members: \$100  
Graduate Student non-members: \$200

**Student Information**

Monday, 12/2  
5pm - New Students Orientation  
5:30pm - Student Meet and Greet

Tuesday, 12/3  
6pm - Social Hour (free buffet)

Wednesday, 12/4  
6pm - Student Reception (free buffet)  
8pm - ASA Jam Session

Thursday, 12/5  
6pm - Social Hour (free buffet)

*Visit [acousticalsociety.org](https://acousticalsociety.org) for registration, room sharing, and travel subsidy information!*

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### IV. Reflections Papers in chronological order

1. Eyring, C. F.(1930): Reverberation time in “dead” rooms, JASA, 1, 217-241 (Google Scholar citation 403);
2. Maa , D.-Y. (1939) “Distribution of eigentones in a rectangular chamber at low frequency range,’ JASA, 10., 235-238. (Google Scholar citation 71)
3. R. V. Waterhouse, “Interference patterns in reverberant sound fields,” J. Acoust. Soc. Am. 27, 247–258 (1955).
4. W. J. Cavanaugh, W. R. Farrell, P. W. Hirtle, and B. G. Watters (1962): "Speech Privacy in Buildings," J. Acoust. Soc. Am. 34, 475-492. (Google Scholar citation 158)
5. M.M. R. Schroeder (1965): “New method of measuring reverberation time,” J. Acoust. Soc. Am. 37, 409–412. (Google Scholar citation 1293)
6. M. R. Schroeder, D. Gottlob, and K. F. Siebrasse, (1974), Comparative study of European concert halls: correlation of subjective preference with geometric and acoustic parameters, JASA 56 (4), 1195-1201
7. Allen, J. B., and Berkley, D. A. (1979). “Image method for efficiently simulating small-room acoustics,” JASA, 65, 943–950. (Google Scholar citation 3618)
8. Beranek, L. L. (1992), Concert hall acoustics—1992, JASA 92, 1-39 (1992);
9. Bradley, J.S., and Soulodre, G.A., "The Influence of Late-arriving Energy on Spatial Impression", J. Acoust. Soc. Am., 97 (4) 2263-2271 (1995).