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## 14th International Seminar NUTAU 2022: Urban Soundscape

*Technological Innovations for Planning and Design*

**Abstract:** This insert covers the 14th NUTAU International Seminar, focused on urban soundscape. Held in December 2022, the event promoted discussions on technological innovations and urban planning and design practices, highlighting lectures, round tables, and presentations by national and international experts. The seminar reaffirmed the importance of multidisciplinary collaboration.

### 14º Seminário Internacional NUTAU: Paisagem Sonora Urbana

Resumo: Este encarte aborda o 14º Seminário Internacional NUTAU, focado em paisagem sonora urbana. Realizado em dezembro de 2022, o evento promoveu discussões sobre inovações tecnológicas e práticas de planejamento e projeto urbano, destacando palestras, mesas redondas e apresentações de especialistas nacionais e internacionais. O seminário reafirmou a importância da colaboração multidisciplinar.

#### 1. Discovering Urban Soundscapes

On December 7 and 8, 2022, the Architecture, Urbanism and Design Technology Research Center of the University of São Paulo (NUTAU USP), linked to the School of Architecture and Urbanism of the University of São Paulo (FAU USP), held the 14th International Seminar NUTAU, whose central theme was “Urban Soundscape,” as shown in the call for submissions in Figure 1.

Since 1996, NUTAU has organized biennial international seminars, addressing emerging and significant topics for advancing knowledge in various areas of architecture, urbanism, and design technology, promoting the exchange of information among researchers, students, and professionals in these fields.

The fourteenth edition counted on the institutional support of the University of São Paulo and three of its units: the School of Architecture and Urbanism, the Polytechnic School (POLI USP), and the School of Communications and Arts (ECA USP). It also received support from Sobrac, ProAcústica, and the Young Acousticians Network.



#### Links:

- [Insta: @nutau.usp](#)
- [Event website](#)



Figure 1: Call for the 14th International Seminar NUTAU 2022.

## 2. Context and Relevance of the Theme

In recent years, research on soundscape has gained prominence alongside a paradigm shift: moving away from the notion of undesirable sound as merely a leftover (evaluated only quantitatively) toward viewing sound as a resource embedded in a context that includes a variety of human variables. Considering a holistic approach in which sound can be a resource rather than merely a leftover to be eliminated is a possible alternative in noise management and control projects, in order to promote people's health and well-being regarding the sound environment.

Soundscape evaluations vary greatly in many dimensions, from sound sources and their characteristics to the countless contexts and the individuality of participants, going far beyond a simple individual auditory judgment. Given these variations, knowledge systematization in this field and the development of standardized procedures are important for establishing a reference method that enables the comparison of different studies in the international community.

Faced with the need for theoretical and methodological harmonization in soundscape, international standards continue to evolve, along with research efforts worldwide. ISO 12913 defines soundscape as “the acoustic environment as perceived or experienced and/or understood, by people, in context,” emphasizing a human-centered approach that integrates auditory sensations, interpretations, and responses to the acoustic environment. Although ISO 12913 has provided a foundation for evaluating and analyzing soundscapes, international standardization still faces challenges, especially in translating terms and comparing results in different languages.

In this context, and believing in the University of São Paulo's potential to articulate the different stakeholders involved, the 14th International Seminar NUTAU aimed to promote knowledge exchange among those responsible for producing, disseminating, and applying techniques and processes in this field—such as researchers, faculty, students, and professionals.

## 3. Seminar: Lectures, Round Tables, and Technical Sessions

The 2022 NUTAU Seminar provided a forum to discuss technological innovations and urban planning practices involving the concept of soundscape. The event's opening featured a lecture by me, addressing definitions and applications of soundscape in urban projects. Next, in the first technical session, four papers were presented. At the end of the first day, Professor Marina Medeiros Cortês, from UFRN, gave a lecture providing an overview of soundwalks in different urban contexts, highlighting the diversity of acoustic experiences in cities.

The second day began with a lecture by Professor Jian Kang, from University College London, who explored the progress made in the field of soundscape over the last 50 years and its future challenges. Francesco Aletta, also from University College London, delivered a lecture on the Soundscape Attributes Translation Project (SATP), a project for translating soundscape perception attributes with the goal of harmonizing terminology and methodologies on an international scale. The morning concluded with a round table about the Brazilian and Portuguese collaboration in the SATP, bringing together experts such as Sonia Alves, Sonia Antunes, Maria Luiza de Ulhôa Carvalho, and Ranny Michalski.

The afternoon began with a lecture by Professor Enrique Suárez Silva, from the Universidad Austral de Chile, about practices that favor soundscape evaluation. This was followed by the second technical session, featuring another four papers. The event ended with a round table that discussed proposals for the future of soundscape in Brazil, including contributions from Maria Lygia Alves de Niemeyer, Maria Luiza de Ulhôa Carvalho, Viviane Suzey Gomes de Melo, and Sergio Silva.

#### 4. Schedule

The event schedule followed the timeline presented in Tables 1 and 2.

**Table 1:** NUTAU 2022 schedule (Part 1/2).

| <b>December 7th</b><br>(7 de dezembro) | <b>Morning</b>  |
|--|---|
| 09h00 – 09h15                          | Opening<br><a href="#">Link to streaming (YouTube)</a>  |
| 09h15 – 09h45                          | Lecture<br><i>Soundscape – definition and applications in urban design and planning</i><br>Speaker: Ranny L. X. Nascimento Michalski – NUTAU / FAU USP<br>Moderator: Cyntia Santos Malaguti de Sousa – NUTAU / FAU USP<br><a href="#">Link to streaming (YouTube)</a> |
| 09h45 – 10h45                          | First Technical Session / Paper Presentations<br>Moderator: Ranny L. X. Nascimento Michalski – NUTAU / FAU USP<br><a href="#">Link to streaming (YouTube)</a>   |
| 10h45 – 11h00                          | Break   |
| 11h00 – 12h00                          | Lecture<br><i>Soundwalk in different urban contexts</i><br>Speaker: Marina Medeiros Cortês – UFRN<br>Moderator: Maria Lygia Niemeyer – UFRJ<br><a href="#">Link to streaming (YouTube)</a>  |
| <b>December 8th</b><br>(8 de dezembro) | <b>Morning</b>  |
| 09h00 – 10h00                          | Lecture<br><i>Soundscape: Progress in the past 50 years and future challenges</i><br>Speaker: Jian Kang – University College London, United Kingdom<br>Moderator: Ranny L. X. Nascimento Michalski – NUTAU / FAU USP<br><a href="#">Link to streaming (YouTube)</a>   |
| 10h00 – 10h15                          | Break   |
| 10h15 – 11h15                          | Lecture<br><i>Soundscape Attributes Translation Project (SATP)</i><br>Speaker: Francesco Aletta – University College London, United Kingdom<br>Moderator: Ranny L. X. Nascimento Michalski – NUTAU / FAU USP<br><a href="#">Link to streaming (YouTube)</a>           |
| 11h15 – 12h00                          | Round Table 1<br><i>SATP Portuguese</i><br>Sonia Alves<br>Sonia Antunes<br>Maria Luiza de Ulhôa Carvalho<br>Ranny L. X. Nascimento Michalski<br>Moderator: Gilson Schwartz – NUTAU USP / ECA USP<br><a href="#">Link to streaming (YouTube)</a>                       |

**Table 2:** NUTAU 2022 schedule (Part 2/2).

| December 8th<br>(8 de dezembro) | Afternoon   |
|---------------------------------|---|
| 14h00 – 15h00                   | Lecture<br><i>Práticas que favorecem la valoración del paisaje sonoro</i><br>Speaker: Professor Enrique Suárez Silva – Universidad Austral de Chile<br>Moderator: Elcione Lobato Moraes – UFPA<br><a href="#">Link to streaming (YouTube)</a>                                     |
| 15h00 – 16h00                   | Second Technical Session / Paper Presentations<br>Moderator: Viviane Melo – UFSP<br><a href="#">Link to streaming (YouTube)</a>   |
| 16h00 – 16h15                   | Break   |
| 16h15 – 17h00                   | Round Table 2<br><i>Proposals for the future of soundscape in Brazil</i><br>Maria Lygia Niemeyer<br>Maria Luiza de Ulhôa Carvalho<br>Viviane Melo<br>Sergio Silva<br>Moderator: Ranny L. X. Nascimento Michalski – NUTAU / FAU USP<br><a href="#">Link to streaming (YouTube)</a> |
| 17h00 – 17h15                   | Closing<br><a href="#">Link to streaming (YouTube)</a>  |

#### 4.1 Lecturers and Debaters

- Enrique Suárez Silva
- Francesco Aletta
- Jian Kang
- Maria Luiza de Ulhôa Carvalho
- Maria Lygia Alves de Niemeyer
- Marina Medeiros Cortês
- Ranny Loureiro Xavier Nascimento Michalski
- Sergio Silva
- Sonia Alves
- Sonia Antunes
- Viviane Suzey Gomes de Melo

#### 5. NUTAU 2022 Organizing Committee

- Prof. Dr.<sup>a</sup> Ranny Loureiro Xavier Nascimento Michalski (FAU USP and NUTAU)
- Prof. Dr.<sup>a</sup> Cyntia Santos Malaguti de Sousa (FAU USP and NUTAU)
- Prof. Dr. Gilson Schwartz (ECA USP and NUTAU)
- Eduardo Gasparelo Lima

- Laís de Gusmão Coutinho
- Michael Édison Klein
- Rafael Galvão Leal Andrade

## 6. NUTAU 2022 Scientific Committee

- Antonio Carlos Lobo Soares (Museu Emílio Goeldi)
- Elcione Maria Lobato de Moraes (FAU UFPA)
- Erasmo Felipe Vergara Miranda (UFSC)
- Gilson Schwartz (ECA USP and NUTAU)
- Italo César Montalvão Guedes (UFS)
- Maria Lygia Alves de Niemeyer (UFRJ)
- Maria Lucia Gondim da Rosa Oiticica (UFAL)
- Marina Medeiros Cortês (UFRN)
- Ranny Loureiro Xavier Nascimento Michalski (FAU USP and NUTAU)
- Sergio Fernando Saraiva da Silva (CREA-MA)

## 7. Papers Presented

The titles and authors of the papers presented at NUTAU 2022 are listed below.

- **Current uses of the soundscape terminology in Brazilian Academia**
  - Rafael Galvão Leal Andrade
  - Ranny Loureiro Xavier Nascimento Michalski
- **Historical evolution and limitations of soundscape studies in urban parks in Curitiba – Paraná**
  - Karoline Farias Koloszuki Maciel
  - Margret Sibylle Engel
  - Paulo Henrique Trobetta Zannin
- **Is railway noise a sound phobia? Reflections on acoustics, environmental rights and risk society to support soundscape planning**
  - Karen Andressa Fernandes
  - Paulo Henrique Trobetta Zannin
  - Norma Felicidade Lopes da Silva Valencio
  - Mateus Stallivieri da Costa

- **Analysis of different interventions for noise control on a highway: a case study considering noise barriers, traffic speed, vehicle types and asphalt**
  - Murilo Cardoso Soares
  - Marcelo Santos Brites
  - José Carlos Giner
  - Yann Ardanaz de Sá
  - Raquel Rossatto Rocha
  
- **Quantitative and qualitative characterization of the soundscape of Bixiga, a traditional neighborhood in the city of São Paulo: Preliminary study of the historicity and culture of Bixiga's sound marks**
  - Michael Édison Klein
  - Ranny Loureiro Xavier Nascimento Michalski
  
- **Reminiscent soundscape of the Bebedouro neighborhood (Maceió – AL) affected by a socio-environmental disaster**
  - Poliana Lopes de Oliveira
  - Roseline Vanessa Santos Oliveira
  - Erasmo Felipe Vergara Miranda
  
- **Influence of the soundscape on the quality of work, leisure and rest during the COVID-19 pandemic**
  - Nara Gabriela de Mesquita Peixoto
  - Lucas Rafael Ferreira
  - Michael Édison Klein
  - Ranny Loureiro Xavier Nascimento Michalski
  - Leonardo Marques Monteiro
  
- **Evaluation of leisure noise in urban environments: an approach based on low-cost sound monitoring systems and artificial intelligence**
  - Paola Weitbrecht
  - Carolina Monteiro
  - Cecilia Jardim
  - Marcel Borin
  - Marcos Holtz
  - Leonardo Jacomussi Pereira de Araujo

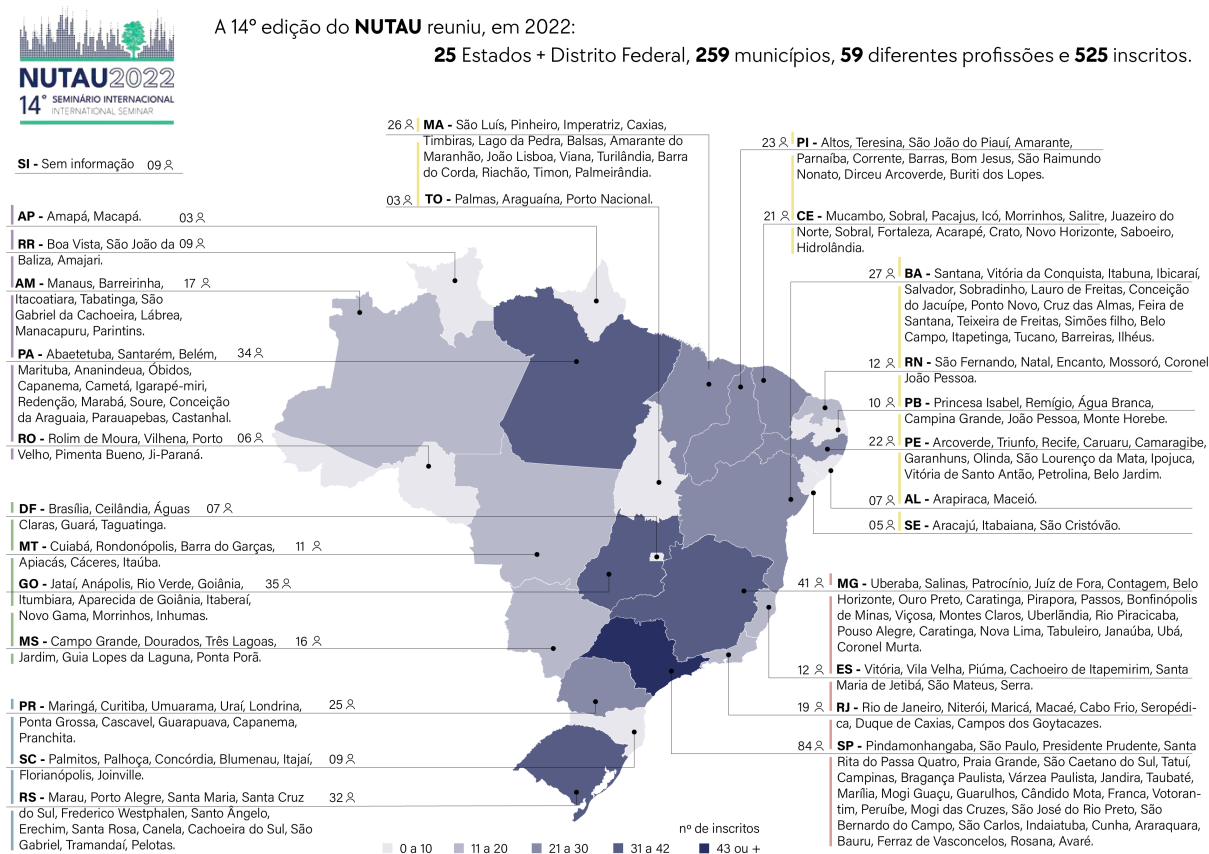
## 8. Future of Soundscape in Brazil

In an increasingly urbanized world where noise pollution is recognized by the World Health Organization (WHO) as a public health issue, the quality of the acoustic environment is essential and must be constantly reconsidered in city planning.

The 14th International Seminar NUTAU 2022 confirmed the importance of viewing soundscape as a valuable resource to be integrated into urban planning, thereby improving the well-being and quality of life of city populations.

By organizing this seminar, NUTAU USP reaffirmed its commitment to research and knowledge dissemination in architecture, urbanism, and design technology, strengthening ties between the academic community and professionals, and reinforcing the need for multidisciplinary collaborations to promote innovative solutions for contemporary urban challenges, such as noise pollution.

A key indicator of the seminar's impact was the significant interest sparked among the national community. This was reflected in the number of registrants and their diverse places of origin. The event drew 525 participants from 259 municipalities, spread across 25 Brazilian states, as illustrated in Figure 2.



**Figure 2:** Places of origin of NUTAU 2022 participants.