16h - 17h30 | Aug. 24, 2017 – Thursday | ROOM 12

ACADEMIC

SCIENTIFIC ACADEMIC PANEL – AFTERNOON EDITION

Chair: Luana Carolina Bravo - Educational committee - SET

This panel will present in this afternoon edition another set of scientific papers that have been submitted to the Call for Papers promoted annually by SET. The selected works will be published in the SET International Journal of Broadcast Engineering (SET IJBE) an international scientific journal whose objective is the diffusion of knowledge on communications engineering, especially of the broadcast areas and new media. The SET IJBE search current research that comprise the state of the art of these technologies.

- **NOVEL UWB ANTENNA FOR BROADCASTING TELEVISION SYSTEM**

Speaker: Euclides Lourenço Chuma - MSc candidate - UNICAMP

This speech presents a ultra-wideband (UWB) discone antenna with a omnidirectional radiation pattern for use in broadcasting television system. Because it is an ultra-wideband antenna and has a omnidirectional radiation pattern making possible the use of a single antenna for receiving of TV signals from several transmitting stations in several geographic locations. The UWB antenna proposed in this work cover the frequency range from 320 MHz to 1.65 GHz with a gain of 1.7 dB and work in indoor and outdoor environments.

- **DIGITAL TV SIGNAL RECEPTION AND AMPLIFICATION SYSTEM**

Speaker: Kassia Toccolini - Master's student at Universidade Federal de Santa Catarina

In this presentation we will present the development of an amplification system and two antennas for the reception of digital TV signals. The proposed antennas were based on the half-wave ($\lambda/2$) dipole topology with meander line geometry (MLA) and magnetic loop antenna. Simulations were performed using software based on the finite element method. The reception of the antenna and the efficiency of the amplification system were evaluated through measurements.

- **CROWDFUNDING JOURNALISM**

Speaker: Lucas Vieira de Araújo - Researcher - Universidade Metodista de São Paulo

The proposal is to discuss innovation in journalism from the analysis of crowdfunding. This proposal is justified because it is a recent practice under construction and due to the lack of analysis based on theories that extrapolate studies in communication. An exploratory research was carried out from bibliographic research. Among the results achieved, it was found that crowdfunding is a promising innovation for the production of content.

- **COMPUTATIONAL SIMULATION PERFORMANCE BASED IN HYBRID MODEL FOR BROADCASTING SYSTEMS**

Speaker: Reinaldo Padilha França - Master's student - Engenharia Elétrica - FEEC / UNICAMP

With the objective of improving the transmission of information in broadcasting systems, in simulation environment, was implemented a model based on discrete events applied at a low level of abstraction in a telecommunication system. The proposal brings a different approach of usual technical, in which the signal transmission on the channel is realized in the discrete domain with the implementation of discrete entities in the process of bit generation.

- **REASONS FOR SFN FAILURE IN BROADCAST**

Speaker: Paulo Eduardo dos Reis Cardoso - PhD candidate / Regulation Specialist - Unicamp / Anate

To deliver the content of a TV network, ensuring efficient spectrum usage, filling not covered and shadow areas, and with energy savings are the advantages of Single Frequency Networks. Thus, in this study we sought to measure information, frequency, and time synchronism to evaluate the status of SFN implementation in Brazilian broadcasting. We took as base of analysis the Digital TV stations of the Campinas/SP area. Through this presentation, we demonstrate that one of the great advantages of ISDB-Tb, the formation of a single frequency network, still cannot be implemented in Brazil..

- **DUAL-POLARIZED INDOOR ANTENNA FOR DIGITAL TV RECEPTION**

Speaker: Guilherme Boscolo dos Santos, MSc candidate, Universidade Presbiteriana Mackenzie

We will introduce the design and simulations of a dual-polarized antenna for digital television signal reception. The objectives of the project were low cost, simple construction and computational implementation for indoor applications and with good performance in terms return loss within the desired frequency band. Through the simulations, it was verified that the proposed antenna radiates

two linear polarizations, horizontal and vertical, from the two feeding ports with a high degree of isolation. The structure developed in this work presents an omnidirectional irradiation pattern, gains over 4 dB in both polarizations, 390 MHz of bandwidth and 72.5% of fractional bandwidth.

- **Speaker: Kassia Toccolini - Marter's student at Universidade Federal de Santa Catarina**

It will be presented a technique of TS generation (Transport Stream) by software, intended for transmission with Digital TV signal generator according to the ISDB-Tb standard. In addition, it will be discussed how this TS was used for transmission and performed an analysis of the performance of BER (Bit Error Rate) in the reception for different communication channels, varying transmission parameters of the ISDB-Tb standard. The analysis was done through the E_b / N_0 ratio by BER from the results obtained for each configuration.

Luana Carolina Bravo - Educational committee - SET

Electrician engineer with emphasis in electronics from the Faculty of Engineering São Paulo. Post graduate in Digital TV by Mackenzie University. She has been in the television business for over 10 years. Participant in the SET board since 2012, member of the Technical Reception Group (GT-Rx) of GIRED, member of the Market Module of the Brazilian Digital TV Forum and representative of ABERT in the Project UHD- Brazil.

Euclides Lourenço Chuma - MSc candidate - UNICAMP

Euclides Lourenço Chuma earned a degree in Mathematics from UNICAMP and graduate degree in Network and Telecommunications Systems in the INATEL. Currently is MSc Candidate in Electrical Engineering at UNICAMP, SP-Brazil. He works as a software engineer in the private sector, and his research interested in Antennas, Wireless Power Transfer, Software Defined Radio and Cognitive Radio.

Kassia Toccolini - Master's student at Universidade Federal de Santa Catarina

She received the titles of Electronic Engineer (2016) by the Federal University of Santa Catarina (UFSC). She is currently in master's degree in Electrical Engineering in electromagnetism area also at UFSC. She is part of Electromagnetism and Electromagnetic Compatibility Laboratory (MagLab) and Electromagnetic Compatibility and Engineering Group (GEMCO) at UFSC. Her areas of interest are electromagnetic fields, telecommunication and digital signals processing.

Lucas Vieira de Araújo - Researcher - Universidade Metodista de São Paulo

Journalist, holds a PhD in Communication at the Methodist University of São Paulo. He has worked as a reporter, editor and Journalism Manager at Rede Globo, Rede Record and RBS Group in Paraná and São Paulo. He was a professor at the University of Northern Paraná (Unopar) and is currently a postgraduate professor at the Faculdade Assis Gurgacz (FAG).

Reinaldo Padilha França - Master's student - Engenharia Elétrica - FEEC / UNICAMP

Graduated in Computer Engineering, currently he is a MSc degree candidate by Faculty of Electrical and Computer Engineering at State University of Campinas, and a researcher at the Laboratory of Visual Communications (LCV). The main topics of interest are Simulation, Operating Systems, Software Engineering, Wireless and Network, Internet of Things, Broadcasting and Telecommunications Systems

Paulo Eduardo dos Reis Cardoso - PhD candidate / Regulation Specialist - Unicamp / Anatel

Holds a degree in Electrical Engineering from the FEEC-UNICAMP (2002) and a MSc degree in Electrical Engineering (Electronics) by DEMICFEEC-UNICAMP (2005). He is currently a PhD candidate in the LCVDECOM-FEEC-UNICAMP, searching Digital TV. Licensed from the post of Specialist in Regulating in the Anatel, where it operates in coordination of grants and resources to the provision, working with the licensing and amendment of technical characteristics of broadcasting stations. Previously, he served in the surveillance in broadcasters. He was responsible for the Technical Regulation to Broadcasting in Modulated Frequency and analysis of processes of technical feasibility for inclusion or amendment of the Basic Plan of Distribution Channels of Broadcasting in Modulated Frequency. He participated as an observer in the Federal Government in testing of Digital Radio Broadcasting, both in tests of American Standard - HD Radio, in 2008 and 2012, as in tests of the European standard - DRM, in 2010. He has worked as a telecommunications researcher of the Fundação Centro de Pesquisas e Desenvolvimento - CPqD..

Guilherme Boscolo dos Santos, MSc candidate, Universidade Presbiteriana Mackenzie

Guilherme Boscolo dos Santos received his B.Sc. degree in Electrical Engineering with emphasis in electronics, telecommunications and automation from Mackenzie Presbyterian University. He is currently attending towards his Master's degree in Electrical Engineering and Computation at Mackenzie Presbyterian University, São Paulo, SP, Brazil. He works as a project engineer in the broadcasting sector and is interested in research in the areas of Antenna, Electromagnetism, Software Defined Radio and Cognitive Radio.

Kassia Toccolini - Marter's student at Universidade Federal de Santa Catarina

She received the titles of Electronic Engineer (2016) by the Federal University of Santa Catarina (UFSC). She is currently in master's degree in Electrical Engineering in electromagnetism area also at UFSC. She is part of Electromagnetism and Electromagnetic Compatibility Laboratory (MagLab) and Electromagnetic Compatibility and Engineering Group (GEMCO) at UFSC. Her areas of interest are electromagnetic fields, telecommunication and digital signals processing.

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