**Programme**

**INTERNATIONAL WORKSHOP**

**1st IoST Workshop: Building bridges for a global network**

Place: Av. Beauchef 851, Santiago, Región Metropolitana, Chile. Sala B06 (Hybrid)

Date: 4 and 5 April 2024 ( 9:45 - 17:30)

**DAY 1 PROGRAM**

**Thursday, April 4th, 2024**

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| 9:30 – 9:45 | Participants registration | | |
| 9:45 – 10:00 | Welcome words | PhD Marcos Diaz | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| **Panel 1** | | | |
| 10:00 – 10:20 | Incorporation of Internet of Space Things (IoST) into the development of the national satellite system (SNSAT) | Colonel (I) Hernan Tello Sepulveda | Chilean Air Force |
| 10:20 - 10:40 | Status of the activities in Chile related to Internet of Space Things (IoST) | PhD Marcos Díaz | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 10:40–11:00 | LoRa communication systems in CubeSats: ArkEdge cases and future plans | Masanobu Tsuji | ArkEdgeSpace |
| 11:00 – 11:40 | Coffee break | | |
| **Panel 2** | | | |
| 11:40 – 12:00 | Channel Modeling in IoT Deployments Supported by LEO Nanosatellites | PhD César Azurdia | Department of Electrical Engineering of the University of Chile |
| 12:00 – 12:20 | Using novel manufacturing technologies for CubeSat antennas: preliminary results | PhD Francisco Pizarro | Pontificia Universidad Católica de Valparaíso, PUCV |
| 12:20 – 12:50 | **Group discussion activity (PhD Marcos Diaz & PhD Sofía Vargas)** | | |
| 12:50 –14:00 | **Lunch** | | |
|  | **Panel 3** | | |
| 14:00– 14:20 | Impact of space weather effects on IoST performance | PhD Juan Carlos Valdés | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 14:20 – 14:40 | Reprogramming capabilities of a IoST CubeSat | PhD Matías Vidal | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 14:40- 15:00 | Satellite positioning using IoT signals | PhD (c) Rodrigo Muñoz | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 15:00 –15:20 | Challenges and restrictions in propulsion systems to correct the orbital altitude of IoT CubeSats | Janis Licuime Rivera | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 15:20 –15:40 | Challenges in large satellite constellations operations for IoST applications (ONLINE) | PhD Carlos González | German Aerospace Center (DLR) |
| 15:40-16:00 | Potential uses for space applications of a network of telescopes originally conceived to perform fast-photometry solar system studies. | PhD Cesar Fuentes | Universidad de Chile, UCH |
| 16:00-16:20 | Preliminary efforts for multi-Sensor, multi-Space Object, multi-Tracking using Lie Algebra and Low Cost Telescopes | PhD Martin Adams | Universidad de Chile, UCH |
| 16:20 – 16:40 | Optical detection and tracking of satellites from ground | PhD Esteban Vera | Pontificia Universidad Católica de Valparaíso, PUCV |
| 16:40- 17:00 | Coffee break | | |
| 17:00 –17:45 | Group discussion activity- Closing the day (PhD Marcos Diaz & PhD Sofía Vargas) | | |

**DAY 2 PROGRAM**

**Friday, April 5th, 2024**

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| 9:30 – 9:45 | Participants registration | | |
| 9:45 – 10:00 | Welcome message | University authority | FCFM- U.de Chile |
|  | **Panel 1** | | |
| 10:00 – 10:20 | Zero digital GAP: what we are missing and how satellite technologies can help | **Claudio Araya San Martín**  **(Subsecretario)** | Subsecretaría de Telecomunicaciones |
| 10:20 - 10:40 | LoraWAN Use Cases and Deployment Experiences in Chile | Tzu-Chiang Shen | BlueShadows |
| 10:40–11:00 | Opportunities using narrow band technology in collaboration with the ham radio community in Chile | Italo Mazzei | Radio Amateurs Chile |
| 11:00 – 11:40 | Coffee break | | |
| **PANEL 2** | | | |
| 11:40 – 12:00 | Plasma thruster for CubeSats | PhD Leopoldo Soto | Comisión Chilena de Energía Nuclear |
| 12:00 – 12:20 | IoST to monitor and track reentering spacecraft | PhD Rodrigo Cassineli | Universidad Federico Santa María |
| 12:20 – 12:50 | **Group discussion activity (Dr. Marcos Diaz & Dr. Sofía Vargas)** | | |
| 12:50 – 14:00 | **Lunch** | | |
|  | **PANEL 3** | | |
| 14:00– 14:20 | Improving the initial calibration of attitude estimation for an IoT CubeSat | PhD (c) Elías Obreque | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 14:20 -14:40 | Attitude Determination and system Control Methods for IoT Cubesat | Felipe Díaz | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 14:40 – 15:00 | Attitude determination systems for IoT nanosatellites | PhD Samuel Gutierrez | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 15:00-15:20 | Design of a testing system for microsatellites propulsion with IoT mission | PhD student Emanuel Escobar | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 15:20 –15:40 | Low-cost MicroPropulsion System and its opportunities in CubeSat for fine attitude correction | Patricio Jara | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 15:40 – 16:00 | Design and Implementation of a Satellite Honeypot (ONLINE) | PhD (c) Efrén López Morales | Texas A&M University-Corpus |
| 16:00 – 16:20 | Stabilized light sources and their applications in space missions | PhD (c) José Pedreros | Space and Planetary Exploration Laboratory; SPEL- U. de Chile |
| 16:20 – 16:50 | Coffee break | | |
| 16:50 – 17:30 | **Group discussion activity (PhD Marcos Diaz & PhD Sofía Vargas)** | | |