32ND INTERNATIONAL SYMPOSIUM ON SPACE TERAHERTZ TECHNOLOGY

BAEZA

¡MUCHO ESPACIO!

OCTOBER 16 – 20, 2022

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Ayuntamiento de BAEZA

Baeza PATRIMONIO MUNDIAL

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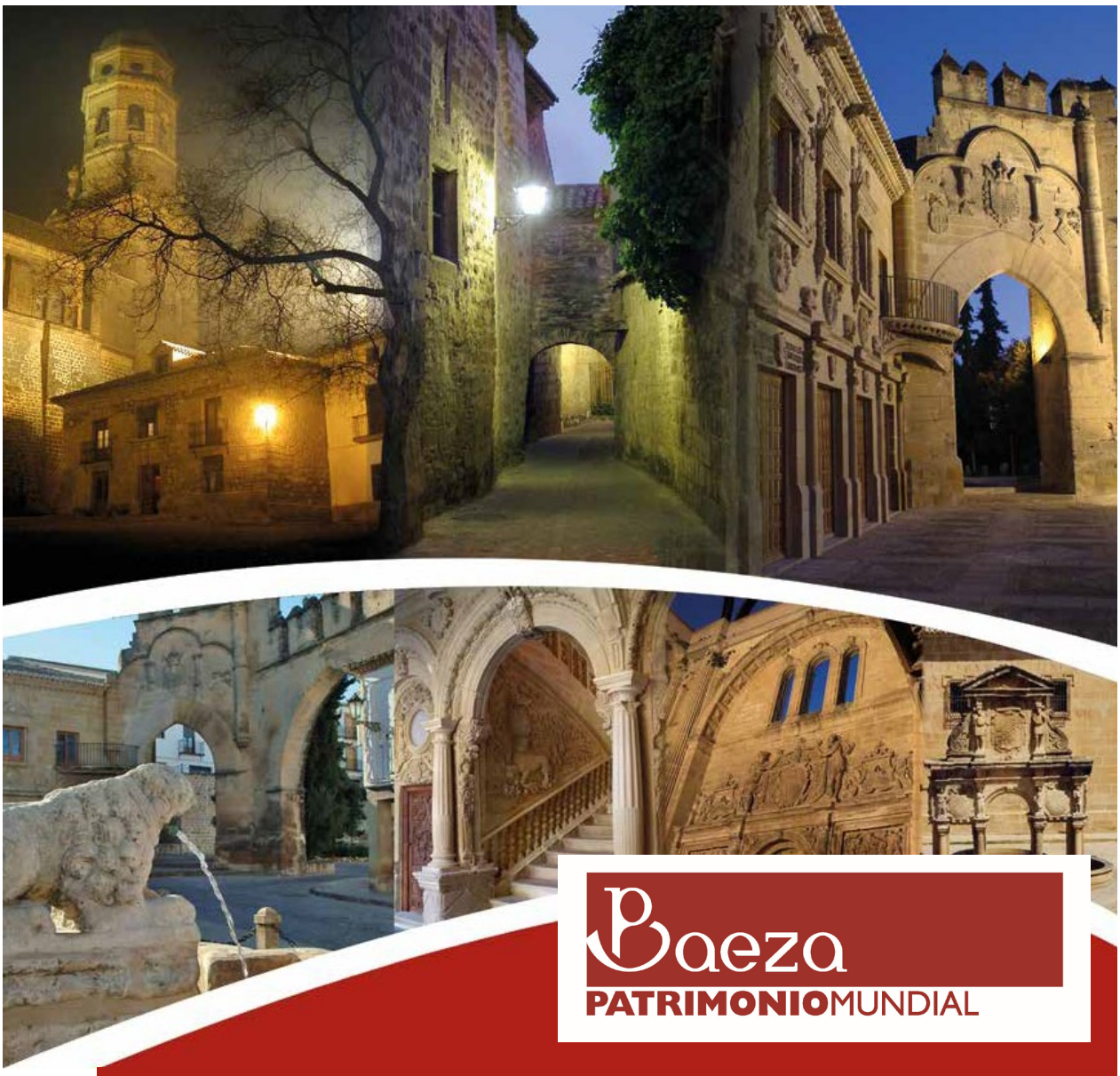


Baeza

PATRIMONIOMUNDIAL

www.baeza.es

THE CITY OF BAEZA WELCOMES ISSTT 2022

Located on a hilltop, Baeza offers one of the most singular landscapes in Andalusia: its magnificent 'sea of olive trees'. Its particular location also allows its visitors to appreciate Baeza's beauty even from far away, with its particular skyline dominated by the main tower of its monumental Cathedral.

Baeza is a city that is proud of its past, its present and its future. A charming city that not only perfectly demonstrates the ability of small cities to host top international workshops and conferences, but it also serves as a perfect travel destination due to its 'hidden gems' and exceptional buildings and landscapes.

It is a great pleasure to welcome all the participants of the 32nd International Symposium of Space Terahertz Technology to our city. As Mayor of Baeza, I am immensely proud and honored that our city was selected to host this year's ISSTT symposium, definitely one of the most important scientific meetings in the field for far-infrared space technologies."

María Dolores Marín Torres

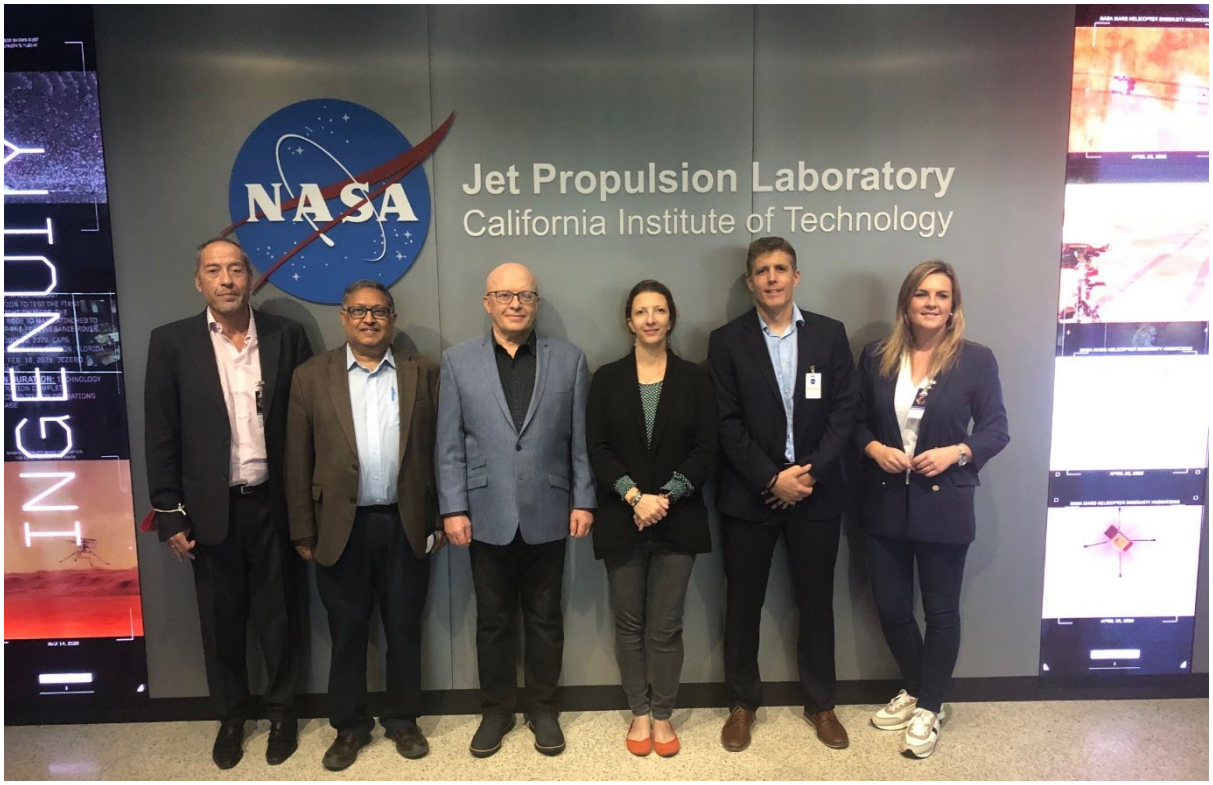
Mayor of Baeza


CATEDRAL
DE BAEZA

ISSTT 2022 LOCAL ORGANIZING COMMITTEE WELCOME

"On behalf of the Local Organizing Committee, the City of Baeza, and the Tourism Office of Spain it is an immense honor to welcome all of you to Spain, for the first time in more than 30 years of ISSTT, and in particular to my hometown, Baeza. A city full of Renaissance buildings and cobbled streets that you will be surprised to see in the south, and one of the 15 UNESCO World Heritage cities in Spain. Baeza is d*efinitely a city full of art, culture and diversity, and thus a perfect place to welcome science and technology innovation. All these together represent indeed the best heritage of the human kind. This will be also the first conference after the Covid-19 pandemic, which made the organization more challenging but also more special. We are looking forward to seeing again so many colleagues after all this long and difficult time. We are convinced ISSTT 2022 will be a very unique conference."*

Jose V. Siles, ISSTT 2022 General chair



Local Organizing Committee:

Jose V. Siles (General Chair), Goutam Chattopadhyay, Imran Mehdi, Alain Maestrini, Boris Karasik, and Cecile Jung-Kubiak (from NASA Jet Propulsion Laboratory); F. Javier Rodríguez Mañas (from Tourism Office of Spain in Los Angeles, Spanish Ministry of Tourism); Lola Marín Torres and Ana Rodríguez (from Baeza City Hall).

ORGANIZATION PARTNERS & SPONSORS

The Organizing Committee of the 32nd International Symposium on Space Terahertz Technology (ISSTT 2022) would like to thank the following institutions and companies for they valued support to make this event happen.

In particular, we would like to express our deepest gratitude to the **Ayuntamiento de Baeza (Baeza City Hall)** and to the **International University of Andalusia (UNIA)** for making available all the conference venues at no cost, including free lodging at the campus for more than 30 students attending the conference. Special thanks also to **the Tourism Office of Spain in Los Angeles** for all their support from the very first day, including not only financial support, but also an incredible institutional support that made it possible to bring the ISSTT conference to Spain for the first time ever.

Our immense gratitude as well to the **Andalusia Tourism Board (Ministry of Tourism, Culture and Sports of the Government of Andalusia – Junta de Andalucía) and the cities of Granada and Córdoba**, for sponsoring the visit to Granada and the Alhambra (including a very special reception and evening private visit to the Alhambra palaces), as well as the visit to the city of Córdoba; to the **UNESCO Spanish World Heritage Cities Group (Grupo Ciudades Patrimonio de la Humanidad de España)**, for sponsoring the Welcome Reception; and to **the Government of Jaén (Diputación de Jaén)**, for co-sponsoring the Conference Banquet together with the **Tourism Office of Spain**.

Thanks to our Diamond sponsors for their contribution to the ISSTT 2022 Student Competition Award and the "Flamenco under the stars" performance.

Special mention as well to our technical sponsors: the Institute of Electrical & Electronics Engineers (IEEE) and its Microwave Theory and Techniques Society (MTT-S). Our partnership with IEEE MTT-S is critical to increase even more the value of the symposium.

Last but not least, thanks to our all sponsors (Diamond, Platinum and Gold) and institutional partners, we have been able to provide around 30 full student travel grants, including waived registration fees, free lodging and free access to all social activities for the conference. To our knowledge, this is the first time that travel grants are offered for students at ISTTT. Because of this initiative we have increased the student participation at the ISSTT to more than a 30% of the total number of attendees. This was the main focus of this year's ISSTT: to create a symposium much more attractive and accessible to students and young professionals. Together, we have turned this into a reality!

Thank you!

MAIN ORGANIZERS

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WELCOME TO BAEZA

This old and illustrious city, is situated in the geographic center of the province, near the Guadalquivir river, in a landscape of fertile lands rich in vegetable and cereal fields and olive groves. Within its district we can find the **Laguna Grande natural beauty spot**, of great ecological importance and the largest in the province.

A calm and tranquil city, of almost Castilian appearance, of outstanding beauty, housing an architectural treasure difficult to find elsewhere. A city where the Renaissance shows all its splendor, a city which inspired Antonio Machado and which offers unforgettable sights around every corner: palaces and churches alongside white houses, façades, porticoes, towers, squares and fountains.

A place to visit and enjoy, where we must Town Hall, Santa Maria Square, the Cathedral, the Palace of Jabalquinto, the Puerta de Úbeda, the Old University, the Palace of the Majorada family, the Convent of San Francisco, the Church of Santa María del Alcázar and San Andres, the Church of Santa Cruz, the Church of San Pablo and the Convent of la Encarnación among others.

History

The city is a treasure of artistic and historic riches. Its first settlements date from very old times. Ptolemy mentions it with the name of Biatra among the Oretan villages. It was called Biattiensis with the Visigoths. During the Al-Andalus period, it was called Biesa and was capital of a kingdom. The Christian re-conquest was carried out in 1146 by King Alfonso VII. Baeza's Code of Laws was granted. It was conquered again by the Muslims in 1158, passing several times from Arab to Christian hands, until 1227 when it was finally conquered by King Fernando III. In 1388 it passed to the crown. Two centuries later it played an important role in the battle for Granada.

In the 16th century it enjoyed a wide economic and cultural development thanks to its position in the center of fertile lands rich in vegetable and cereal fields, and olive groves.

Antonio Machado, and of the most famous poets of all times, worked as a French teacher in its High School, which was built almost 500 years ago and served as University for three centuries.

BAEZA

From a distance you can already appreciate the beauty of this Andalusian city, with a profile perfectly crowned by the tower of the cathedral. Take a stroll through this splendid, walled city and at each step discover a monumental complex where each street, building and square is imbued with art and history.

◂ BAEZA

A QUICK TOUR OF BAEZA

Baeza has been inhabited since remote times by Iberians, Romans, Visigoths and Moors. Its golden age was in the 16th and 17th centuries, when it was a great ecclesiastical and educational centre, one of the most important Renaissance communities in Spain.

Your tour starts in the **Plaza de Santa María**, dominated by a magnificent stone fountain and the **Cathedral of La Natividad de Nuestra Señora**. A number of buildings will catch your eye in this area, like the **San Felipe Neri Seminary** and the **Jabalquinto Palace.** Opposite the palace you'll find the **Church of La Santa Cruz**, the best-preserved Romanesque church in Andalusia, and the **old university**, where you can visit the classroom where the poet Antonio Machado used to teach.

You really shouldn't miss the picturesque **Plaza del Pópulo**, dominated by the **Fountain of Los Leones**. Here you'll find the **Casa del Pópulo**, which houses the tourist office, and the **Antiguas Carnicerías** or Ancient Slaughterhouses. This iconic square is also where the **Villalar Arch** and the **Jaén Gateway** stand, they are the remains of the old city wall which protected the city during the Moorish era.

From here it's just a short walk to the gardened **Plaza de la Constitución**, where local residents come for a stroll and to meet and which is flanked by porticoes where the old craft guilds used to be. The most representative and prominent of its monuments include the **Alhóndiga** or Grain Market, the **Balcón del Concejo** or Council House and the **Fountain of La Estrella**.

▲ JABALQUINTO PALACE

To learn about the city's remote past you should visit the **Cerro del Alcázar** archaeological site and then you could enjoy the atmosphere and some delicious Andalusian cuisine in the busy **Plaza de España**. We recommend the cod with tomato and pine nuts, the walnut tarts and the different jams.

ⓘ *For further information go to:*
www.ubedaybaezaturismo.com

MONUMENTOS Y LUGARES DE INTERÉS

01. Antiguo Pósito (Centro de Interpretación)(s. XVI)
02. Plaza del Pópulo
03. Fuente de los Leones (s. XVI)
04. Antiguas Carnicerías (s. XVI)
05. Puerta de Jaén y Arco de Villalar (s. XVI)
06. Audiencia Civil y Escribanías Públicas (s. XVI)
07. Museo Baeza (s. XVI) (Primera Fundación Universitaria)
08. Antiguo Convento de Santa Catalina (s. XVI)
09. Restos de la Iglesia de San Pedro (s. XIII - XIV)
10. Palacio de los Marqueses de Villareal (s. XVIII)
11. Plaza de Santa María
12. Fuente de Santa María (s. XVI)
13. Catedral (s. XI - XVII)
14. Casas Consistoriales Altas (s. XV)
15. Antiguo Seminario Conciliar de San Felipe Neri (UNIA) (s. XVII)
16. Palacio de Rubín de Ceballos (s. XIX)
17. Casa de los Ávila (s. XVII)
18. Restos de la Iglesia de San Juan Bautista (s. XII)
19. Palacio de los Obispos (s. XVI)
20. Casa de los Avilés (s. XVI)
21. Plaza de Santa Cruz
22. Iglesia Románica de Santa Cruz (s. XIII)
23. Palacio de los Ponce de León (Colegio Filipense) (s. XV)
24. Palacio de los Marqueses de Jabalquinto (UNIA) (s. XV - XVI)
25. Antigua Universidad (s. XVI)
26. Capilla Universitaria de San Juan Evangelista (s. XVI)
27. Arco del Barbudo (s. XII)
28. Casa de los Fontecilla (s. XVIII)
29. Casa de los Galeote (s. XVII - XVIII)
30. Cristo del Cambrón (s. XV)
31. Paseo de la Constitución (s. XVI)
32. Quiosco de la Música (s. XX)
33. Fuente del Triunfo (s. XVII)
34. Balcón del Concejo (s. XVII)
35. Alhóndiga (s.XVI)
36. Fuente de la Estrella (s. XIX)
37. Hospital de San Antonio Abad (Archivo y Biblioteca) (s. XVI)
38. Casa de Justicia y Carcel (Ayuntamiento) (s. XVI)
39. Iglesia de la Concepción (s. XVII)
40. Convento de San Francisco (Auditorio) (s. XVI)
41. Mercado de Abastos (s. XX)
42. Torre de los Aliatares (s. XII)
43. Palacio de los Salcedo (s. XVI)
44. Palacio de los Sánchez de Valenzuela (s. XV)
45. Casa de los Acuña (s. XVI)
46. Casa de los Cabrera (s. XV-XVII)
47. Iglesia de San Pablo (s. XV-XVII)
48. Palacio de Los Escalante (s. XVI)
49. Monumento a San Juan de la Cruz (s. XX)
50. Antiguo Convento-Seminario de la Compañía de Jesús (s. XVI - XVII)
51. Puerta de Úbeda y Torre Albarrana (s. XII)
52. Casa del Licenciado Pedraza (s. XVI)
53. Casa del Vicario (s. XVI)
54. Plaza de Toros (s. XIX)
55. Iglesia de San Ignacio (s. XVII)
56. Convento de San Antonio de Padua (s. XV)
57. Fuente del Moro (s. XVI)
58. Casa de Vela de Almazán (s.XIX)
59. Convento de la Magdalena (s. XVI-XVII)
60. Recogimiento de Santa Ana (s.XVI)
61. Iglesia de San Andrés y Santa María del Alcázar (s. XVI)
62. Convento de la Encarnación (s.XVII)
63. Iglesia de los Trinitarios Descalzos (s. XVIII)
64. Iglesia del Salvador (s. XV)
65. Paseo de Antonio Machado o de las Murallas
66. Monumento a Antonio Machado (s. XX)

Úbeda · Baeza
Patrimonio Mundial
Ayuntamiento de BAEZA
Centro Histórico
Baeza

HORARIO DE MUSEOS, MONUMENTOS Y OTROS LUGARES VISITABLES

SANTA IGLESIA CATEDRAL Y MUSEO CATEDRALICIO
Plaza de Santa María, s/n T. 953 74 41 57
Horario de visitas:
de Lunes a Domingo: de 10:00h a 14:00h y de 16:00h a 19:00h.

MUSEO DE LA CULTURA DEL OLIVO
Hacienda La Laguna. Puente del Obispo.
Ctra. A-315 a 8 Km. dirección Jaén
Horario de visitas:
de 10:30 a 13:30 y 16:30 a 19:00 h.

ANTIGUA UNIVERSIDAD Y AULA DE MACHADO
Calle Beato Juan de Ávila s/n
Horario de visitas: lunes a domingo; de 10:00h a 14:00h
y de 16:00h a 19:00h

MUSEO DE BAEZA
1ª Fundación Universitaria s. XVI
Horario de visitas:
De martes a sábados; de 10:00h a 14:00h y de 16:00h a 18:30h.
Verano tardes de 18:00 a 20:00h.
Domingos; de 10:00h a 14:00h
Lunes; cerrado

PALACIO DE JABALQUINTO. (UNIA)
Cuesta de San Felipe Neri, s/n. T. 953 74 28 75
Horario de visitas: de Lunes a Viernes laborables de 9:00 a 14:00 h.

ANTIGUO SEMINARIO DE SAN FELIPE NERI
Plaza de Santa María, s/n.
Horario de visitas: de Lunes a Viernes laborables de 9:00 a 14:00 h.

ANTIGUAS CARNICERÍAS
Plaza de los Leones, s/n
Visita exterior

AUDIENCIA CIVIL Y ESCRIBANÍAS PÚBLICAS
Plaza de los Leones, s/n
Oficina de Turismo de la Junta de Andalucía

ANTIGUA CÁRCEL Y PALACIO DE JUSTICIA
Ayuntamiento de Baeza.
Pasaje Cardenal Benavides, 5
Horario de Lunes a viernes laborables de 08:00 a 15:00horas

Museo Antonio Moreno y Galería de Arte del Centro de Ferias y Congresos de Baeza.
C/ Compañía s/n. T. 953 74 41 43
Lunes a Viernes laborables de 17:30 H a 20:00 H
Sábados de 10:00H a 14:00H y de 17:00H a 20:30H

CONVENTO DE SAN FRANCISCO Auditorio.
C/ San Francisco, s/n.
Visita exterior

CENTRO DE INTERPRETACIÓN "RENACE BAEZA"
Calle Barbacana s/n
de miércoles a domingo; de 10:30h a 14:00h
de miércoles a sábado; de 16:30h a 19:00h

CENTRO DE INTERPRETACIÓN BAEZA MEDIEVAL "TORREÓN PUERTA DE ÚBEDA"
Horarios de visita:
de Jueves a domingo; de 10:30h a 14:00h
de jueves a sábado; de 16:30h a 19:00h

OTROS DATOS DE INTERÉS

ESTACIÓN DE AUTOBUSES
Avenida del Alcalde Puche Pardo
T. 953 74 24 53

PARADA DE TAXI
Plaza de España
T. 953 74 00 06

RENFE
T. 902 24 02 02

OFICINA DE CORREOS Y TELÉGRAFOS
Calle Julio Burell, 19
T. 953 74 08 39

CENTRO DE SALUD
Calle Manuel Acero, 1
T. 953 74 09 17 / 953 77 96 04

AYUNTAMIENTO DE BAEZA
Pasaje Cardenal Benavides, 5
T. 953 74 01 50
www.baeza.es

CONCEJALÍA DE TURISMO
Pasaje Cardenal Benavides, 5
T. 953 74 01 50
e-mail: turismo@baeza.net

OFICINA DE TURISMO
Plaza de los Leones, s/n.
T. 953 77 99 82
otbaeza@andalucia.org
www.andalucia.org

ARCHIVO Y BBIBLIOTECA MUNICIPAL
C/ Puerta de Córdoba
T. 953 74 13 00

PROTECCIÓN CIVIL
C/ Compañía, s/n.
T. 954 74 30 20

POLICÍA LOCAL
C/ Madre de Dios, 2
T. 953 74 08 39

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CONFERENCE VENUES

Registration will be open during the Welcome Reception which will be held at the Baeza City Hall from 8.00 pm to 10.30 pm, on Sunday, October 16, 2022.

The Symposium will utilize three venues located for the technical sessions:

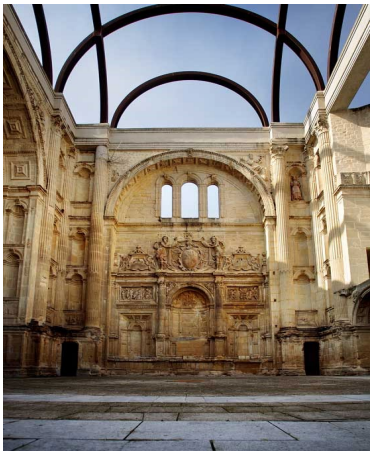
- All **oral sessions** will be at the **Ruinas de San Francisco Auditorium**.
- The **poster session** will take place at the cloister patio of **Palacio de Jabalquinto**.
- The **plenary talks** will be at Baeza's theatre/music hall, **Teatro Montemar**

There will be WIFI access in all the venues. A Registration & Information desk will be set outside the Ruinas de San Francisco Auditorium and be open from 8:15 am on October 17, and from 8:30 am on October 18. Registration will also be available at the Welcome Reception at the City Hall.

- **Ayuntamiento de Baeza** (reception) – *Pasaje Cardenal Benavides, 10, 23440 Baeza, Spain*
- **Ruinas de San Francisco** (technical sessions) - *Plaza San Francisco, 10, 23440 Baeza, Spain*
- **Palacio de Jabalquinto** (poster session) – *Plaza de Santa María, 23440 Baeza, Spain*
- **Teatro Montemar** (plenary talks) - *Calle Cózar, 23440 Baeza, Spain*
- **Hotel Puerta de la Luna** (banquet) - *Calle Canónigo Melgares Raya, 7, 23440 Baeza, Spain*

Ayuntamiento de Baeza

Ruinas de San Francisco



Palacio de Jabalquinto

Teatro Montemar

Hotel Puerta de la Luna

Plaza de Santa María

The Symposium banquet will be held on October 18, 2022, (cocktail reception at 9:15 pm, followed by dinner) at the Hotel Puerta de la Luna. A special flamenco performance under the starts by Latin Grammy's Award Winner "Arcángel" will be offered to the attendees at Plaza de Santa María (7:45pm), before the banquet.

ISSTT 2022 SCIENTIFIC ORGANIZING COMMITTEE

The Scientific Organizing Committee (SOC) was responsible for reviewing the abstracts and making recommendations on acceptance and format of presentation for each abstract. This Committee will also decide on the place and dates for the next ISSTT.

Victor Belitsky
Chalmers University of Technology
Sweden

Andrey Baryshev
University of Groningen
The Netherlands

Brian Ellison
Rutherford Appleton Laboratory
United Kingdom

Jian-Rong Gao
SRON
The Netherlands

Gregory Goltsman
Moscow State Pedagogical University
Russia

Christopher Groppi
Arizona State University
USA

Jeffrey Hesler
Virginia Diodes Inc.
USA

Heinz-Wilhelm Hübers
DLR
Germany

Boris Karasik
Jet Propulsion Laboratory
USA

Valery Koshelets
IRE RAS
Russia

Alain Maestrini
Paris Observatory
France

Hiroshi Matsuo
NAOJ
Japan

Imran Mehdi
NASA Jet Propulsion Laboratory
USA

Patricio Mena
University of Chile
Chile

Netty Honingh
University of Cologne
Germany

Christophe Risacher
IRAM
France

Sheng-Cai Shi
Purple Mountain Observatory
China

José V. Siles
NASA Jet Propulsion Laboratory
USA

Jan Stake
Chalmers University of Technology
Sweden

Edward Tong
Smithsonian Astrophysics Observatory
USA

Yoshinori Uzawa
NAOJ
Japan

Ghassan Yassin
University of Oxford
United Kingdom

CONFERENCE PROGRAM

For this year's ISSTT, 126 submissions have been accepted for presentation, 3 of which will be Invited Presentations, 2 Plenary Talks, 44 regular contributed Oral Presentations, 10 short Oral Presentations for the Student Competition Finalists, and 67 contributed Poster Presentations (+10 additional poster presentations also from Student Competition Finalists).

The review process was carried out by SOC members with each abstract been reviewed by at least three reviewers. The conference schedule (see next section) consists of 3 Invited Sessions, 2 Plenary Talk Sessions, 1 Roundtable on Women in Space Terahertz Technology, 12 Oral Sessions and 1 Poster Session.

The **ISSTT 2022 Student Paper Competition, sponsored by Virginia Diodes**, is also being held to identify and recognize outstanding technical contributions from individual students. 10 contributions have been selected as finalists (see table below) and will have the opportunity to do a ~8 min oral presentation during the conference. The finalists will also receive a travel grant, which will include waived registration fee, lodging support during the days of the conference and access to all conference social activities at no extra charge. First, second, and third prizes will be awarded based on content and presentation where the criteria are ranked in the following order:

1) Creativity or novelty of the ideas presented in the paper
2) Paper quality and technical soundness of the presented work
3) Oral presentation of the paper at the conference and response to audience questions.

To be considered for an award, the student must be the lead author, personally present the paper at ISSTT 2022, and their advisor must confirm that the paper was mostly the students work (>80%).

First Name	Last Name	Institution	Abstract title
Mohamed Aniss	Mebarki	Chalmers University of Technology, Sweden	A Cryogenic Scalable Small-Signal & Noise Model of GaN HEMTs
Coralie	Elmaleh	Université du Littoral Côte d'Opale, France	CEAS and CRDS with Fabry-Perot spectrometry between 550-650 GHz
Joseph	Longden	University of Oxford, UK	Experimental characterisation of titanium nitride transmission lines for applications as kinetic inductance travelling wave parametric amplifiers
Divya	Jayasankar	Chalmers University of Technology, Sweden	Design and Characterisation of a 3.5-THz Fundamental Schottky Mixer
Jeremy	Scott	University of Lethbridge, Canada	Design, Operation, and Characterization of a Laboratory Spatial-Spectral Fourier Transform Interferometer
Jakob	Wenninger	University of Oxford, UK	A Compact 240 GHz SIS Polarimeter for Large Array Applications
David	Monasterio	Universidad de Chile, Chile	Development of an instantaneous multiband digital 2SB receiver for the 67–116-GHz band
Javier	Carrasco	University of Chile, Chile	The effect of complex dispersion and impedance in the gain of superconducting traveling-wave kinetic inductance parametric amplifiers
Javier	Navarro Montilla	University of Oxford, UK	Exploring the Limits of the Tunnel Junction Fabrication Technique for Josephson Junctions TWPA and the Preliminary Characterisation Results
Chris	Benson	University of Lethbridge, Canada	Performance and characterization of a novel PID controlled TES detector array for use in a double-Fourier far-infrared interferometer

Information for Authors

Oral Presentations:

- **PLENARY TALKS**: 60 min. (50 min. presentation + 10 min. discussion)
- **INVITED TALKS**: 30 min. (25 min. presentation + 5 min. discussion)
- **STANDARD TALKS**: 17 min. (14 min. presentation + 3 min. discussion)
- **STUDENT COMPETITION FINALIST TALKS**: 8 min. (No Q&A, Q&A will take place during poster session). Please remember that the student competition finalists also need to participate int he poster session.

The oral sessions were held in the Ruinas de San Francisco Auditorium. Presenters are requested to bring the slides (.pptx or .pdf format only) on a USB device and to copy them before the session on the laptop available in the session room. Please note that oral speakers cannot use their computers. Presentations must be in 16:9 format.

Poster Presentations:

POSTER FORMAT: 40"x 30" (Portrait) is preferred due to the width of the available poster panels, but A0 (portrait) can be also accommodated. PLEASE DO NOT PRINT YOUR POSTER IN LANDSCAPE FORMAT. The presenting authors are responsible of printing and bringing the poster to the conference.

Information for session chairs:

Session chairs should arrive in their assigned rooms five to ten minutes before the start of their session and check the attendance of all speakers. If a speaker is missing, please coordinate with the rest of the presenters to move their time slots forward to fill the gap.

Policy on oral/poster presentations for all participants

The policy of the ISSTT is that at least one of the authors of an accepted paper must be present at the conference to present the paper (orally or at a poster session). If the author is not present at the assigned session where the paper is being presented, the paper will be removed from the final digest of manuscripts that is archived on the ISSTT proceedings database and will not be able either to submit an extended paper to the special issues of the IEEE TST Journal. This policy will be strictly enforced.

Photography/video recording policy

Please note that photographs and footage by a professional photographer will be taken throughout the ISSTT 2022. Attendees cannot record or photograph in-person presentations or posters out of respect to the presenter. Please ask the presenter to send a copy to you if interested. Final manuscript submissions and proceedings publication

Final manuscript submission and proceedings publication

Presenters will be asked to submit a 2-8 pages final manuscript for the proceedings of the ISSTT 2002 in October 2022. The proceedings of the ISSTT 2022 will be uploaded to the online library at the NRAO. Alternatively, the authors can choose to submit a short manuscript (2 pages) for the ISSTT 2020 proceedings and a full paper, using the standard IEEE peer-review procedure and rules, for publication in a special issue of the IEEE Transactions on Terahertz Science (TST) and Technology. Deadlines will be announced at a later day.

32nd IEEE International Symposium on Space Terahertz Technology (ISSTT 2022)

October 16-20, 2022, Baeza, Spain

Technical Program

TIME	MINS	Sunday, October 16, 2022	TIME	MINS	Monday, October 17, 2022	TIME	MINS	Tuesday, October 18, 2022	TIME	MINS	Wednesday, October 19, 2022	TIME	MINS	Thursday, October 20, 2022
8:00			8:00	15	Coffee & Registration (30 mins)	8:00	30	Coffee & Registration (30 mins)	8:00	0		8:00	30	
9:00			9:00	15	Opening Remarks **Invited Talk I**: Dr. Kartik Seth	9:00	0 30	Roundtable: Women in Space Teraherz Platinum Sponsors Session	9:00	0 30	**Poster Session** *Palacio de Jabalquinto*	9:00		
10:00			10:00	50 0	**Session I:** Instruments & Systems for Future Missions I *Auditorio Ruinas de San Francisco*	10:00	50	**Session V:** Novel Devices, Technologies & Components *Auditorio Ruinas de San Francisco*	10:00		Coffee Break (30 mins) **Poster Session** *Palacio de Jabalquinto*	10:00		Departure to Granada (transit time ~1h30min)
11:00	0	Shuttle Madrid Airport - Baeza (transit time ~4h00min)	11:00	10 40	Coffee Break (30 mins)	11:00	10 40	Coffee Break (30 mins)	11:00	15 30		11:00	30	
12:00			12:00		**Session II:** Student Competition Finalists *Auditorio Ruinas de San Francisco*	12:00	0	**Session VI:** Instrument & Systems for Ground Telescopes *Auditorio Ruinas de San Francisco*	12:00		**Session IX:** Measurement Techniques *Auditorio Ruinas de San Francisco*	12:00	0	Visit to Graanda
13:00	0	Shuttle Madrid Airport - Baeza (transit time ~4h00min)	13:00	20 40	Diamond Sponsors Session Lunch Break (80 mins)	13:00	20 40	Lunch Break / LOC & SOC Lunch (100 mins)	13:00	10 40	Invited Talk III: Dr. Paul Hartogh Lunch Break	13:00		Invited Talk III: Dr. Antxon Alberdi
14:00			14:00			14:00			14:00			14:00	0	Special lunch/reception offered by Andalusian region *Carmen de los Martires*
15:00		Shuttle Madrid Airport - Baeza (transit time ~4h00min)	15:00	0	**Session III:** THz Sources I *Auditorio Ruinas de San Francisco*	15:00	0	**Session VII:** THz Antennas & Optical Components *Auditorio Ruinas de San Francisco*	15:00	0	**Session X:** Far-Infrared Balloon-Borne Missions *Auditorio Ruinas de San Francisco*	15:00	30	
16:00			16:00	20	Coffee Break	16:00	20	Coffee Break	16:00	20	Coffee Break (30 mins)	16:00		Visit to the Alhambra Palace & Generalife Gardens
17:00	30	Baeza Historic City Center Visit	17:00	50	**Session IV:** Solid-State Receivers *Auditorio Ruinas de San Francisco*	17:00	50	**Session VIII:** Cryogenic Receivers, Mixers and Backends *Auditorio Ruinas de San Francisco*	17:00	50	**Session XI:** THz Sources II *Auditorio Ruinas de San Francisco*	17:00		
18:00			18:00	15	**Plenary Talk:** Dr. John Mather, 2006 Nobel Prize in Physics *Teatro Montemar*	18:00	30	Baeza Historic City Center Visit Olive Oil Museum Visit	18:00	50	**Session XII:** Instruments & Systems for Future Missions II *Auditorio Ruinas de San Francisco* Closing Remarks / Student Award	18:00		
19:00	0		19:00			19:00	45		19:00	30	**Outreach Talk:** Dr. Paul Goldsmith, NASA/JPL *Teatro Montemar*	19:00	0	
20:00		Welcome Reception & Conference Registration *Baeza City Hall*	20:00	0	Ruta de la Tapa (Scavenger Tapas Night)	20:00		Flamenco under the stars with **Arcángel, 2018 Latin Grammy Award Winner** *Plaza de Santa María, Baeza Cathedral*	20:00			20:00		Departure to Baeza (transit time ~1h30min)
21:00			21:00			21:00	0	Cocktail & Conference Banquet *Hotel Puerta de la Luna*	21:00			21:00		
22:00			22:00	0	A Night of Magic with **Javi Benitez, 2018 FISM World Champion** *Café Bar Central*	22:00			22:00	30	Typical Spanish Late Social *Burladero de Copas / Cafe Bar Central*	22:00		Typical Spanish Late Social *Burladero de Copas / Cafe Bar Central*
23:00			23:00			23:00			23:00			23:00		

October 17, 2022 (Monday)

Venue: Ruinas de San Francisco Auditorium (Hall)

08:15	*Coffee & Registration (30 mins)*

Venue: Ruinas de San Francisco Auditorium

8:45		**ISSTT 2022 Opening Remarks & Information**

Venue: Ruinas de San Francisco Auditorium

9:15	Invited Talk I - **Dr. Kartik Seth, NASA** Chair: *Jose V. Siles (NASA Jet Propulsion Laboratory)*

Venue: Ruinas de San Francisco Auditorium

Session I – Instruments & Systems for Future Missions I Chair: *Victor Belitski (Chalmers University of Technology)*		
09:50	S1.1	"A Direct Up-Conversion G-band Radar Prototype for Atmospheric Measurements" **Raquel R. Monje,** *NASA Jet Propulsion Laboratory*
10:10	S1.2	"MetOp-SG Ice Cloud Imager 183-664 GHz Front-End Receivers Proto-Flight Model Qualification and Acceptance Test Results" **Bertrand Thomas**, *Radiometer Physics GmbH*
10:30	S1.3	"On-Ground Calibration Targets for the Ice Cloud Imager Instrument on the MetOP Second Generation Satellite" **Axel Murk**, *University of Bern*
10:50	S1.4	"Highly-Compact Terahertz Spectrometers on Ultra-Small Platforms" **Goutam Chattopadhyay**, *NASA Jet Propulsion Laboratory*

Venue: Ruinas de San Francisco Auditorium (Patio)

11:10	*Coffee Break (30 mins)*

Venue: Ruinas de San Francisco Auditorium

Session II – Best Student Paper Competition Finalists Chair: *Jeffrey Hesler (Virginia Diodes, Inc.)*		
11:40	S2.1	"Performance and characterization of a novel PID controlled TES detector array for use in a double-Fourier far-infrared interferometer" **Chris Benson**, *University of Lethbridge*
11:50	S2.2	"The effect of complex dispersion and impedance in the gain of superconducting traveling-wave kinetic inductance parametric amplifiers" **Javier Carrasco**, *University of Chile*
12:00	S2.3	"CEAS and CRDS with Fabry-Perot spectrometry between 550-650 GHz" **Coralie Elmaleh**, *Université du Littoral Côte d'Opale*
12:10	S2.4	"Design and Characterisation of a 3.5-THz Fundamental Schottky Mixer" **Divya Jayasankar**, *Chalmers University of Technology*
12:20	S2.5	"Experimental characterisation of titanium nitride transmission lines for applications as kinetic inductance travelling wave parametric amplifiers" **Joseph Longden**, *Chalmers University of Technology*
12:30	S2.6	"A Cryogenic Scalable Small-Signal & Noise Model of GaN HEMTs" **Mohamed Aniss Mebarki**, *University of Chile*
12:40	S2.7	"Development of an instantaneous multiband digital 2SB receiver for the 67–116-GHz band" **David Monasterio**, *University of Chile*
12:50	S2.8	"Exploring the Limits of the Tunnel Junction Fabrication Technique for Josephson Junctions TWPA and the Preliminary Characterisation Results" **Javier Navarro Montilla**, *University of Oxford*
13:00	S2.9	"Design, Operation, and Characterization of a Laboratory Spatial-Spectral Fourier Transform Interferometer" **Jeremy Scott**, *University of Lethbridge*
13:10	S2.10	"A Compact 240 GHz SIS Polarimeter for Large Array Applications" **Jakob Wenninger**, *University of Oxford*

Venue: Ruinas de San Francisco Auditorium

Diamond Sponsors Session Chair: *Imran Mehdi (NASA Jet Propulsion Laboratory)*		
13:20	DS1	Virginia Diodes, Inc.
13:30	DS2	Genera Tecnologías, S.A.

13:40 - 15:00	*Launch Break (90 mins)*

Venue: Ruinas de San Francisco Auditorium

Session III – Terahertz Sources I Chair: *Alain Maestrini (NASA Jet Propulsion Laboratory)*		
15:00	S3.1	"An Upgrade to the 1.9THz Local Oscillator for the SOFIA GREAT Instrument" **Thomas Crowe**, *Virginia Diodes, Inc.*
15:20	S3.2	"Electron Speed Saturation Effects in the Schottky Barrier Diodes Implemented in an 800 – 900 GHz Frequency Tripler" **Diego Moro Melgar**, *ACST GmbH*
15:40	S3.3	"High-Power Compact Sources in the 200 - 300 GHz Frequency Range" **Verónica Laín Rubio**, *ACST GmbH*
16:00	S3.4	"Ultra-broadband integrated room-temperature Schottky diode based local oscillators for line surveys in the 400-2070 GHz range" **José V. Siles**, *NASA Jet Propulsion Laboratory*

Venue: Ruinas de San Francisco Auditorium (Patio)

16:20	*Coffee Break (30 mins)*

Venue: Ruinas de San Francisco Auditorium

Session IV – Solid State Receivers Chair: Berhanu Bulcha (NASA Goddard Space Flight Center)		
16:50	S4.1	"Terahertz Heterodyne Receiver Frontend Based on SiGe BiCMOS Technology for Space Applications" **Nick Rothbart**, *German Aerospace Center (DLR)*
17:10	S4.2	"A Solid-State, Non-Cryogenic Receiver Operating at 2.5THz" **Theodore Reck**, *Virginia Diodes, Inc.*
17:30	S4.3	"THz Receivers for Thermospheric Science" **Alain Maestrini**, *NASA Jet Propulsion Laboratory*

Venue: Teatro Montemar

18:15	Plenary Talk **– Dr. John Mather, 2006 Nobel Prize of Physics, NASA** **"Opening the Infrared Treasure Chest with JWST"** Chair: *Paul Goldsmith (NASA Jet Propulsion Laboratory)*

20:00	*Ruta de la Tapa (Scavenger Tapas Night)*

Venue: Café Bar Central

22:00	*A Night of Magic* **Javi Benítez, 2018 FISM World Champion**

October 18, 2022 (Tuesday)

Venue: Ruinas de San Francisco Auditorium (Hall)

08:30	*Coffee & Registration (30 mins)*

Venue: Ruinas de San Francisco Auditorium

9:00	**Roundtable | Women on Space Terahertz Research** *Chairs: Martina Wiedner (Observatory of Paris), Kartik Sheth (NASA)*

Venue: Ruinas de San Francisco Auditorium

Platinum Sponsors Session Chair: *Imran Mehdi (NASA Jet Propulsion Laboratory)*		
09:30	PS1	ACST
09:35	PS2	Thomas Keating
09:40	PS3	RPG / Rohde & Schwarz

Venue: Ruinas de San Francisco Auditorium

Session V – Novel Devices, Technologies & Components Chair: Hiroshi Matsuo (*National Astronomical Observatory of Japan, NAOJ)*		
09:50	S5.1	"Measurement of Transmission Losses of Superconducting Coplanar Waveguide and Microstrip Lines with On-chip Resonators at 2 mm Wavelength" **Wenlei Shan**, *National Astronomical Observatory of Japan (NAOJ)*
10:10	S5.2	"A Micromachined 1.37 THz Waveguide-based 2X2 Beam Divider for HEB Detectors" **Haotian Zhu**, *National Space Science Center (CAS)*
10:30	S5.3	"A Turnstile Quad-Ridge OMT for Full Octave-Bandwidth Receivers" **Doug Henke**, *NRC Herzberg Astronomy and Astrophysics*
10:50	S5.4	"Recent research on (sub)mm-wave OMTs at NAOJ" **Alvaro González**, *National Astronomical Observatory of Japan (NAOJ)*

Venue: Ruinas de San Francisco Auditorium (Patio)

11:10	*Coffee Break (30 mins)*

Venue: Ruinas de San Francisco Auditorium

Session VI – Instruments & Systems for Ground Telescopes *Chair: Patricio Mena (NRAO)*		
11:40	S6.1	"Results from ALMA Band 2 cryogenic LNA pre-production run" **Sener Türk**, *Max Planck Institute for Radio Astronomy*
12:00	S6.2	"ALMA Band 2 Cold Cartridge Assembly Design" **Victor Belitsky**, *Chalmers University*
12:20	S6.3	"ALMA Band 9 Sideband Separating Upgrade" **Ronald Hesper**, *Kapteyn Astronomical Institute - University of Groningen*
12:40	S6.4	"Status of ALMA Band 6v2 Receiver Development" **Joseph Lambert**, *National Radio Astronomy Observatory (NRAO)*
13:00	S6.5	"16-pixel, 3 mm band, Cryogenic Array Receiver for Users of the Sardinia Observatory (CARUSO)" **Hui Wang**, *STFC – RAL Space*

13:20 - 15:00	*Launch Break / LOC & SOC Lunch (100 mins)*

Venue: Ruinas de San Francisco Auditorium

Session VII – Terahertz Antennas & Optical Components Chair: Heinz-Wilhelm Hübers (German Aerospace Center, DLR)		
15:00	S7.1	"Algorithmic Design of Terahertz Silicon Metaoptics" **Conner Ballew**, *NASA Jet Propulsion Laboratory*
15:20	S7.2	"Optics for the TEMPERA-C polarimetric middle atmosphere temperature sounder" **Roland Albers**, *Bern University*
15:40	S7.3	"Monolithic focal plane array concept for space and ground applications" **Andrey Baryshev**, *Kapteyn Astronomical Institute (NOVA, RUG)*
16:00	S7.4	"3D Printed Submillimeter Reflectors: a New Design and Manufacturing Methodology" **Paul Goldsmith**, *NASA Jet Propulsion Laboratory*

Venue: Ruinas de San Francisco Auditorium (Patio)

16:20	*Coffee Break (30 mins)*

Venue: Ruinas de San Francisco Auditorium

Session VIII – Cryogenic Receivers, Mixers & Back-ends Chair: *Netty Honingh (University of Cologne)*		
16:50	S8.1	"Towards the heterodyne receiver for balloons and SmallSats above 2 THz" **Boris Karasik**, *NASA Jet Propulsion Laboratory*
17:10	S8.2	"Performance analysis of superconductor insulator superconductor mixer for 260 GHz atmospheric window" **Andrey Baryshev**, *Kapteyn Astronomical Institute (NOVA, RUG)*
17:30	S8.3	"Low noise, wide band MgB2 hot electron bolometer mixer at 5.3 THz and 20 K" **Behnam Mirzaei**, *Delft University of Technology*
17:50	S8.4	"On embedding of an HEB mixer into a THz photonic integrated circuit" **Alexander Shurakov**, *Moscow Pedagogical State University*
18:10	S8.5	"2-18 GHz Ultra-wideband Cryogenic Amplifier with 4 K Noise Temperature" **Isaac López Fernández**, *Observatorio de Yebes*

18:30	*Baeza Historic City Center Visit* *or Olive Oil Museum Visit*

Venue: Plaza de Santa María (in front of the Cathedral)

19:45	*Flamenco under the stars with* ***Arcángel, 2018 Latin Grammy Award Winner***

Venue: Hotel Puerta de la Luna

21:15	*Conference Banquet*

October 19, 2022 (Wednesday)

Venue: Palacio de Jabalquinto

09:00	*Registration / Poster Session (starts)*

Venue: Palacio de Jabalquinto

Poster Session *Chair: Cecile Jung-Kubiak (NASA Jet Propulsion Laboratory)*	
9:00 10:00	Poster Session Presentations (see complete list of poster presentation in the next pages)
10:00	*Coffee Break*
10:30 11:15	Poster Session Presentations (cont.) (see complete list of poster presentation in the next pages)

Venue: Ruinas de San Francisco Auditorium

Session IX – Measurement Techniques Chair: *Christopher Groppi (Arizona State University)*		
11:30	S9.1	"Versatile Radiometric Testbed for the Submillimeter Wave Instrument" **Mikko Kotiranta**, *University of Bern*
11:50	S9.2	"Harmonic phase and amplitude beam characterization of a wideband on-chip spectrometer" **Stephen Yates**, *SRON*
12:10	S9.3	"Characterization of widefield THz optics using phase shifting interferometry" **Nicolás Reyes**, *Max Planck Institue for Radioastronomy*
12:30	S9.4	"CCAT prime: Multi-map Holographic Measurement for FYST Testbed——near-field beam measurement and data análisis" **Xiadong Ren**, *University of Cologne*
12:50	S9.5	"Introducing LORENTZ: A Novel Low-temperature Near-field Terahertz Chamber for Instrument Characterisation" **Paul Moseley**, *European Space Agency*

Venue: Ruinas de San Francisco Auditorium

13:10	Invited Talk II **– Dr. Paul Hartogh** Chair: *Imran Mehdi (NASA Jet Propulsion Laboratory)*

13:40 - 15:00	*Launch Break (80 min)*

Venue: Ruinas de San Francisco Auditorium

Session X – Far-Infrared Balloon-Borne Missions Chair: *Kartik Sheth (NASA)*		
15:00	S10.1	"GUSTO Payload Design and Performance" **Christopher Walker**, *University of Arizona*
15:20	S10.2	"The Terahertz Intensity Mapper (TIM): design and development status of a far-infrared balloon for spectroscopic galaxy evolution studies" **Christopher Groppi**, *Arizona State University*
15:40	S10.3	"The OSAS-B instrument: a balloon-borne heterodyne spectrometer for atomic oxygen in the mesosphere and lower thermosphere" **Martin Wienold**, *German Aerospace Center (DLR)*
16:00	S10.4	"ASTHROS - Astrophysics Stratospheric Telescope for High-Spectral Resolution Observations at Submillimeter-Wavelengths: Architecture Design and Subsystem Level Integration & Test Status" **Jose V. Siles**, *NASA Jet Propulsion Laboratory*

Venue: Ruinas de San Francisco Auditorium (Hall)

16:20	*Coffee Break (30 mins)*

Venue: Ruinas de San Francisco Auditorium

Session XI – Terahertz Sources II Chair: *Jian-Rong Gao (SRON)*		
16:50	S11.1	"Frequency stabilization of 3.5-THz and 4.7-THz quantum-cascade lasers by a phase-locked loop" **Heiko Richter**, *DLR - Institute of Optical Sensor Systems*
17:10	S11.2	"The ammonia laser: a possible local oscillator for space applications?" **Jean Francois Lampin**, *IEMN CNRS*
17:30	S11.3	"A tunable, high power source for GUSTO's local oscillator at 4.74 THz" **Ali Khalatpour**. *Massachusetts Institute of Technology (MIT)*

Venue: Ruinas de San Francisco Auditorium

Session XII – Instruments & Systems for Future Missions II Chair: *Martina Wiedner (Observatory of Paris)*		
17:50	S12.1	"Kinetic Inductance Detector based focal plane arrays for the Terahertz Intensity Mapper" **Reinier Janssen**, *NASA Jet Propulsion Laboratory*
18:10	S12.2	"Reflector-Based Phased Array for High Power G-band radars" **Alain Maestrini**, *NASA Jet Propulsion Laboratory*
18:30	S12.3	"French contribution on the SWI hardware and flight models acceptance levels" **Jeanne Treuttel**, *Observatory of Paris*

Venue: Ruinas de San Francisco Auditorium

18:50		**ISSTT 2022 Closing Remarks & Student Award Winner**

Venue: Teatro Montemar

19:30	Public Outreach Talk **– Dr. Paul Goldsmith, NASA** **"The Legacy of the Arecibo Telescope"** Chair: *Jose V. Siles (NASA Jet Propulsion Laboratory)*

Venue: Discoteca Albacara

22:30	*Typical Spanish Late Social*

October 20, 2022 (Thursday)

10:00	*Departure to Granada* **(transit time ~1h30 min)**

11:30	*Short visit to Granada*

Venue: Carmen de los Martires Granada

13:30	Invited Talk III - **Dr. Antxon Alberdi, Director IAA** Chair: *Jose V. Siles (NASA Jet Propulsion Laboratory)*
14:00	*Special reception/lunch offered by Andalusia in Cármen de los Mártires*

16:00	*Visit to Alhambra*

08:30	*Departure to Baeza* **(transit time ~1h30 min)**

Venue: Discoteca Albacara / Bar Central / Burladero de Copas

22:30	*Typical Spanish Late Social*

APPENDIX: LIST OF POSTER PRESENTATIONS

Poster Session Chair: *Cecile Jung-Kubiak (Jet Propulsion Laboratory)*	
P1. INSTRUMENTS AND SYSTEMS FOR FUTURE MISSIONS	
P1.1	"Architecture of ASTHROS' Spectral Data Collection and Onboard Anomaly Detection Pipeline" **Paul Horton**, *Arizona State University*
P1.2	"Atmospheric Phase Monitoring System Evolution for the NOEMA interferometer" **Sylvain Mahieu**, *IRAM*
P1.3	"Heterodyne Array Receiver Study for the FIRSST Space Mission" **Martina Wiedner**, *Observatory of Paris*
P1.4	"Jupiter Icy Moon Explorer, Submillimeter wave Instrument: Delivery status of the 1200 GHz high spectral resolution receiver front end" **Jeanne Treuttel**, *Observatory of Paris*
P1.5	"Cold Optics on the Terahertz Intensity Mapper (TIM)" **Talia Saeid**, *Arizona State University*
P1.6	"Multipixel 2-color Superconducting Receiver for ASTHROS" **Jonathan Kawamura**, *NASA Jet Propulsion Laboratory*
P1.7	"Progress toward Antarctic Terahertz Intensity Interferometry" **Hiroshi Matsuo**, *National Astronomical Observatory of Japan*
P1.8	"Breaking the 10mW/pixel limit for kinetic inductance detector readout electronics" **Adrian STD-0026_ISSTT2022_Elmaleh**, *University of British Columbia*
P1.8	"The Space Interferometer for Cosmic Evolution (SPICE): The Far Infrared Universe at High Spectral Resolution" **Locke Spencer**, *University of Lethbridge*
P2. BEST STUDENT PAPER COMPETITION	
P2.1	"G-Band Metamaterial-Based Circulator for FCC-Compliant Space-to-Earth Communication" **Ali Alqaraghuli**, *Northeastern University*
P2.2	"Performance and characterization of a novel PID controlled TES detector array for use in a double-Fourier far-infrared interferometer" **Chris Benson**, *University of Lethbridge*

P2.3	"Particle Swarm Algorithm Applied to Quadrature Hybrid Multi-Branch Directional Coupler Optimization for ALMA Band 3" **Jorge Hernán Cárdenas**, *University of Antioquia*
P2.4	"The effect of complex dispersion and impedance in the gain of superconducting traveling-wave kinetic inductance parametric amplifiers" **Javier Carrasco**, *University of Chile*
P2.5	"CEAS and CRDS with Fabry-Perot spectrometry between 550-650 GHz" **Coralie Elmaleh**, *Université du Littoral Côte d'Opale*
P2.6	"A MKID-readout based on a heterogeneous, closely coupled architecture" **Gerrit Grutzeck**, *Max-Planck-Institute for Radio Astronomy*
P2.7	"Lock-In Amplification Spectrometer Firmware for Amplitude Modulated IF Signal Outputs" **Jonathan Hoh**, *Arizona State University*
P2.8	"Design and Characterisation of a 3.5-THz Fundamental Schottky Mixer" **Divya Jayasankar**, *Chalmers University of Technology*
P2.9	"Experimental characterisation of titanium nitride transmission lines for applications as kinetic inductance travelling wave parametric amplifiers" **Joseph Longden**, University of Oxford
P2.10	"Design and Fabrication of All-metal Micromachined Finline Structures for Millimeter and Sub-millimeter Applications" **Cristian López**, *Chalmers University of Technology*
P2.11	"Sub-mm Wave Schottky Mixer Pumped with 170µW Optically Generated Local Oscillator Power" **Javier Martínez Gil**, *ACST GmbH*
P2.12	"CubeSounder: Development of Microwave Radiometer 3D Weather Imaging Sensors" **Kyle Massingill**, *Arizona State University*
P2.13	"Proof-of-concept experiment on a novel microwave circulator based on frequency converters" **Sho Masui**, *Osaka Prefecture Univ. / National Astronomical Observatory of Japan*
P2.14	"A Cryogenic Scalable Small-Signal & Noise Model of GaN HEMTs" **Mohamed Aniss Mebarki**, *Chalmers University of Technology*
P2.15	"Development of an instantaneous multiband digital 2SB receiver for the 67–116-GHz band" **David Monasterio**, *Universidad de Chile*
P2.16	"Exploring the Limits of the Tunnel Junction Fabrication Technique for Josephson Junctions TWPA and the Preliminary Characterisation Results" **Javier Navarro Montilla**, *University of Oxford*
P2.17	"SIS photon detectors for THz observations beyond the gap energy" **Ayako Niwa**, *Univeresity of Tsukuba*

P2.18	"Design, Operation, and Characterization of a Laboratory Spatial-Spectral Fourier Transform Interferometer" **Jeremy Scott**, *University of Lethbridge*
P2.19	"Development of the wide IF 230 GHz SIS mixer design for KVN-Pyeongchang VLBI station" **Naeun Shin**, *Seoul National University / Korea Astronomy & Space science Institute*
P2.20	"4×2 Hot Electron Bolometer mixer arrays for detection at 1.4, 1.9 and 4.7 THz for GUSTO" **Jose Silva**, *SRON/RUG*
P2.21	"Orbiting Astronomical Satellite for Investigating Stellar Systems" **Siddhartha Sirsi**, *University of Arizona*
P2.22	"A Compact 240 GHz SIS Polarimeter for Large Array Applications" Jakob Wenninger, University of Oxford
P2.23	"Study of anti-reflection layer on dielectric lens for the new 72–116 GHz 7-beam receiver of the Nobeyama 45-m telescope" **Yasumasa Yamasaki**, *Osaka Prefecture University/National Astronomical Observatory of Japan*
P2.24	"Tunable Antenna-Coupled Intersubband Terahertz (TACIT) Mixer Integrated with Self-complementary Antenna" **Changyun Yoo**, *University of California Santa Barbara*
P3. SOLID-STATE RECEIVERS	
P3.1	"325 GHz and 650 GHz Dual-polarisation receivers Concept" **Olivier Auriacombe**, *AAC Omnisys*
P4. NOVEL DEVICES, TECHNOLOGIES & COMPONENTS	
P4.1	"SIS technology development to serve Next Generation receivers for ALMA" **Alexei Pavolotsky**, *Chalmers University of Technology*
P4.2	"Integrated Schottky Technology for Supra-THz Applications" **Vladimir Drakinskiy**, *Chalmers University of Technology*
P4.3	"Estimation of Input Power Handling Capability of Next-Generation GaN Schottky Diodes for Millimeter Wave Frequency Multipliers" **Priyanka Mondal**, *Observatory of Paris*
P4.4	"Characterization of a Wide-Band Microstrip Parametric Amplifier Utilizing 4-Wave-Mixing Techniques" **Emily Linden**, *Arizona State University*
P4.5	"Analysis of the low temperature behavior of GaN-on-SiC Schottky barrier diodes" **Beatriz Orfao**, *University of Salamanca*

P4.6	"LO power division circuits for the CCAT-prime Heterodyne Array Instrument (CHAI)" **Ignacio Barrueto**, *University of Cologne*
P4.7	"Characterization of monolithically integrated lithium niobate ring resonator for a high sensitivity room temperature radiometer" **Jessica César Cuello**, *University Carlos III of Madrid*
P4.8	"Characterization of Superconducting NbTiN films using TDS, DFTS and Parallel Plate Resonator" **Fedor Khan**, *Institute of Radioengineering and Electronics of RAS*
P4.9	"A Low Loss Diplexer for Submillimeter-wave Sideband Separating Receivers" **Subash Khanal**, *NASA Jet Propulsion Laboratory*
P4.10	"Design of RF waveguide structure for 2SB SIS receiver for Millimetron 211-275 GHz VLBI channel" **Andrey Khudchenko**, *Astro Space Center of P.N. Lebedev Physical Institute RAS*
P5. INSTRUMENTS & SYSTEMS FOR GROUND TELESCOPES	
P5.1	"A 67-116 GHz MMIC-based dual-polarized 2SB down-converter for the ALMA Band 2 Warm Cartridge Assembly prototype development" **Bertrand Thomas**, *Radiometer Physics GmbH*
P5.2	"SEPIA345: a dual polarization 2SB cartridge receiver for APEX telescope: Design and Performance" **Denis Meledin**, *Chalmers University of Technology*
P5.3	"ALMA Band 2 Receiver Automated Test System" **Jan Barkhof**, *NOVA*
P5.4	"Development of ALMA Band 1 Corrugated Horns based on Metal 3D Printer" **Keiko Kaneko**, *National Astronomical Observatory of Japan*
P5.5	"Demonstrator of Cryogenic Multibeam Receiver with MMIC LNAs for 75-116 GHz" **Patrice Serres**, *IRAM*
P5.6	"Study of ALMA Band 2 receiver optical design for ACA 7-m antenna" **Hiroaki Imada**, *National Astronomical Observatory of Japan*
P6. TERAHERTZ ANTENNAS & OPTICAL COMPONENTS	
P6.1	"Measurements of a 480 GHz Metamaterial Flat Lens" **Casssandra Whitton**, *Arizona State University*

P6.2	"A Tunable Linear to Right-Handed Circularly Polarized THz Antenna Based on Graphene Switch" **Mohammad Alibakhshikenari**, *Universidad Carlos III de Madrid*
P6.3	"A broad-band and dual-polarization single-layer dichroic filter for applications in Sub-THz Range" **Daniel Montof**, *Chalmers University of Technology*
P6.4	"Stepped Impedance Metal-Mesh Filters for Terahertz Frequencies" **Adhitya B. Sriram**, *Arizona State University*
P6.5	"A Compact Dielectrically Loaded Quad-ridge Feed Horn for Octave Band Radio Astronomy Application" **Sara Salem Hesari**, *National Research Council Canada*
P6.6	"A satellite tracking system at 78GHz using the over-moded TE21 ground-station antenna pattern" **Hugh Gibson**, *Gibson Microwave Design (GMD)*
P6.7	"Diffraction efficiency simulation for reflective metallic gratings operating in the THz range: comparison between the RCWA and FEM-based methods" **María Manuela Fernández**, *INTA*
P6.8	"Circularly Polarized Dielectric Resonator Antenna for the Terahertz Band Applications" **Wael Jaafar**, *Carleton University*
P6.9	"Design and Analysis of a Spline-Profile Diagonal Horn Antenna at 104GHz for Microwave Holography" **Daniele Ronso Lima**, *Kapteyn Astronomical Institute*
P7. CRYOGENIC RECEIVERS, MIXERS & BACK-ENDS	
P7.1	"Design of a 350 GHz Circular Waveguide Superconductor-Insulator-Superconductor Mixer for Array Applications" **Boon Kok Tan**, *University of Oxford*
P7.2	"Design of RF waveguide structure for 2SB SIS mixer at 210-280 GHz" **Sabrina Realini**, *Kapteyn Astronomical Institute, University of Groningen*
P7.3	"Towards 100% array yield: understanding (and fixing) the causes of KID array inhomogeneity" **Eduard Driessen**, *IRAM*
P7.4	"Design and Performance of the Terahertz Photon Counting System: Detectors and Cryogenics" **Hajime Ezawa**, *National Astronomical Observatory of Japan*
P7.5	"Enhanced sensitivity of THz NbN hot electron bolometer mixers" **Behnam Mirzaei**, *Delft University of Technology*
P7.6	"10.7 THz HEB heterodyne mixer designs" **Johanna Böhm**, *University of Cologne*

P7.7	"Noise temperature and S-parameter measurements of an SIS-based microwave amplifier" **Takafumi Kojima**, *National Astronomical Observatory of Japan*
P8. MEASUREMENT TECHNIQUES	
P8.1	"Development of Broadband Permittivity Measurement System" **Ryo Sakai**, *National Astronomical Observatory of Japan*
P8.2	"Applying Energy Absorption Interferometry to THz direct detectors using photomixers" **Ian Veenendaal**, *SRON*
P8.3	"Space qualification of MMIC Schottky " diodes chips for SWI instrument of JUICE mission" **Jérôme Valentin**, *Observatory of Paris*
P8.4	"In situ 1-Port Cryogenic Vacuum Device Calibration" **Marko Neric**, *Arizona State University*
P8.5	"Characterization of a 183 GHz radiometer receiver with heterodyne noise injection calibration system" **Tomas Thuroczy**, *IETR, Université de Rennes 1*
P8.6	"Numerical and theoretical modeling of a heterodyne noise injection radiometer system" **Tomas Thuroczy**, *IETR, Université de Rennes 1*
P9. TERAHERTZ SOURCES	
P9.1	"Frequency stabilization of a 4.7 THz Quantum Cascade Laser using a delay line frequency discriminator" **Sajjad Mahdizadeh**, *University of Cologne*
P9.2	"Study on Oscillation Characteristics of G-band Gyrotron Traveling Wave Tubes with a Tapered Interaction Circuit" **Yelei Yao**, *University of Electronic Science and Technology of China (UESTC)*
P9.3	"Phase-locking THz QC-VECSEL local oscillators using diode mixers and sources" **Chris Curwen**, *NASA Jet Propulsion Laboratory*

IMPORTANT NOTE:

Late abstract submissions are still welcome for poster presentations.

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