COMMUNICATION THEORY TECHNICAL COMMITTEE

GLOBECOM 2019 DECEMBER 10, 2019 WAIKOLOA

Chair: Urbashi Mitra Vice-Chair: **Maite Brandt-Pearce** Secretary: **Meixia Tao**



AGENDA

- **1. Welcome and Introduction**
- 2. Approval of Minutes from 2019 IEEE ICC meeting (available at http://committees.comsoc.org/comt/)
- 3. Chair Remarks
- 4. 2019 CTTC Awards
- 5. Communication Theory Symposium Reports:
 - GLOBECOM 2019 (Wei Yu)
 - ICC 2020 (Harpreet Dhillon)
 - Globecom 2020 (Rui Dinis)
- 6. Workshop Reports:
 - CTW 2019 (Petar Popovski)
 - CTW 2020 (Andrew Eckford)
 - CTW 2021 (Pablo Ramirez-Espinosa)
 - CTW 2022 proposal (Peter Hong)
- 7. Student Competition
- 8. New Business

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WHAT IS CTTC?

- We hold meetings twice per year:
 - At ICC and GLOBECOM.
- Become a member by joining the mailing list.
 - http://committees.comsoc.org/comt/mailinglist.html
- You are an active member if:
 - Attend 2 of the past 5 meetings; or
 - Attend last two CTWs; or
 - Provide significant service to the committee.
- Currently, ~600 members, ~150 of which are active.
- Be sure to SIGN IN, so that we can log your attendance.
- Learn more about CTTC activities in the new TC newsletter:

OFFICERS

Chair

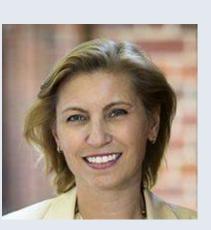
- Urbashi Mitra
- University of Southern California, USA

Vice-Chair

- Maite Brandt-Pearce
- University of Virginia, USA

Secretary

- Meixia Tao
- Shanghai Jiaotong University







OTHER POSITIONS

Standards Liaison

- Amitava Ghosh
- Nokia Bell Labs





Student Competition Program

- Rui Dinis
- New University of Lisbon

LOOKING AHEAD

- 2020 last year of service for current officers
- Will elect new chair at Globecom 2020
 - Chair selects Vice Chair and Secretary
 - Consider serving!
- A Nominations and Election committee will be constituted to collect nominations for Chair – a candidate will be put forth
- Self-nominations!

MAILING LIST INFORMATION

- Email list is comm-theory@ieee.org
 - Must be subscribed to send
 - Moderated: Must be approved by an officer
- Is a "quiet" list with few postings per year
- Standard acceptable uses:
 - CTTC-business: Meeting announcements, minutes, etc.
 - CFP for CTTC sponsored events: CTW and CT Symposia
- Special uses:
 - CT-related job openings posted by CT members: Postdoc & faculty
 - Niche workshops targeted to the CT community
 - Connection to CTTC must be clear/CT community involvement
- Not-acceptable:
 - CFP's for conferences and workshops that are widely known
 - Advertising of graduate programs and announcements of fellowships

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MINUTES

Communication Theory Technical Committee (CTTC) ICC 2019, Shanghai, China May 21, 2019 ATTENDANCE = 34

EXECUTIVE SUMMARY

- 1. The minutes from the Globecom 2018 meeting were approved
- 2. CTTC structure and goals reviewed
- 3. An update was given on standards activities
- 4. CTTC awards again presented
- 5. ICC 2019, Globecom 2019, ICC 2020 reports were given
- 6. CTW 2019, CTW 2020, and CTW 2021 reports were given
- 7. There was no new business

WANT TO BECOME MORE INVOLVED?

- Volunteer to be on the TPC for an upcoming Comm Theory Symposium (typical TPC size is around 150members)
 - ICC'20: Contact Deniz Gunduz, Imperial College London d.gunduz@imperial.ac.uk
- Volunteer to be a symposium chair
 - We have made nominations through Globecom'21
 - ICC'22 Seoul, Korea)
 - We need more volunteers!
 - Contact Ubli (ubli@usc.edu), and include your bio/CV
- Get involved with the organization of a CTW
 - Next proposal needed: CTW'22
- Organize a Best Readings

IEEE COMSOC BEST READINGS

Best Readings is a curated collection of previously published books, articles, and papers on a featured topic

- Published quarterly at http://www.comsoc.org/best-readings
- Links to the source reference with short descriptions
- Helpful to those who wants to acquire a background on the topic
- Examples
 - Broadband Access
 - Cloud Communications and Networking
 - Cognitive Radio
 - Communications and Information Systems Security
 - Device-to-Device Communications
 - e-Health
 - Green Communications
 - Internet of Things
 - Massive MIMO
 - Multi-Tier Cellular
 - Nanoscale Communication Networks
 - Optical Wireless Communications
 - Physical Layer Security
 - Power Line Communications
 - Smart Grid Communications
- M. Valenti is EiC
 - Let him know if you would like to guest edit

UPDATING OUR P&P

A few notes....

CONGRATULATIONS NEW FELLOWS

- Salman Avestimehr
- Wan Choi
- Marco diRenzo
- Octavia Dobre
- Feifei Gao
- Eduard Jorswieck
- Markku Juntti
- Ana Perez Neira
- Joel Rodrigues
- Pengfei Xia
- Rick Wesel
- Angela Zhang



AWARDS

CTTC gives out 3 distinct awards:

- Technical Achievement Award
- Outstanding Service Award
- Early Achievement Award

(can be multiple recipients or no recipients in a given category)

- Call for Nominations sent in June/July
- Awarded at following GLOBECOM, ICC, or CTW
- Nominations due July 30 of every year
 - Web forms on CTTC website

2019 CTTC AWARDS COMMITTEE



Maite Brandt-Pearce, Chair



Costas Georghiades



David Gesbert



Erik Perrins



Junshan Zhang 16

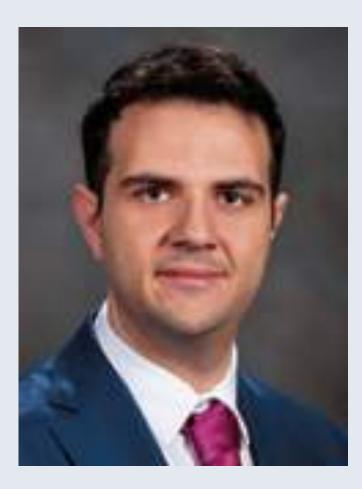
EARLY ACHIEVEMENT AWARD

- Recognizes young members of the CTTC who have achieved early career visibility in the field through research and service and who (i) have participated in the CTTC (e.g., attended CTTC meetings, attended CTW, served the CTTC in a significant capacity, been a member of the TPC for ICC/GLOBECOM) and (ii) are within 10 years of their Ph.D.
- Past recipients:
 - 2018: Ayfer Özgür
 - 2017: Tony Q.S. Quek and Deniz Gündüz
 - 2016: Marios Kountouris

EARLY ACHIEVEMENT AWARD

Walid Saad, Professor, Virginia Tech

For contributions to distributed optimization and learning for heterogeneous wireless systems



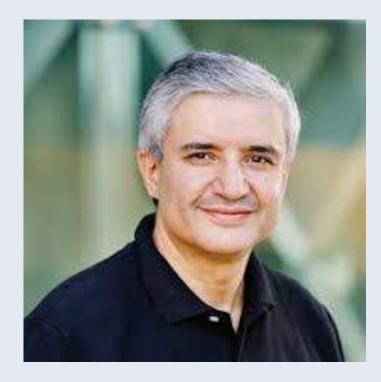
TECHNICAL ACHIEVEMENT AWARD

- Recognizes members of the CTTC who have been involved with the committee, have done outstanding work in communication theory, and have achieved a high degree of visibility in the field.
- Past recipients:
 - 2018: Elza Erkip
 - 2017: Behnaam Aazhang and Michael B. Pursley
 - 2016: Jack Winters
 - 2015: John Proakis
 - 2014: Reinaldo Valenzuela and Norm Beaulieu

TECHNICAL ACHIEVEMENT AWARD

Mohamed-Slim Alouini Professor KAUST

For the development of performance evaluation techniques for wireless communication systems



OUTSTANDING SERVICE AWARD

- Recognizes members of the CTTC who have a distinguished record of service to the communication theory community, including CTTC-sponsored symposia and workshop organization, leadership roles within the committee, and promoting committee activities and interests in the broader research community.
- Past recipients:
 - **2018:** None
 - 2017: Robert W. Heath Jr.
 - 2016: Behnaam Aazhang
 - 2015: Sergio Benedetto
 - 2014: Ender Ayanoglu
 - 2013: Michael Rice

OUTSTANDING SERVICE AWARD

Andrea Goldsmith Professor Stanford University

For her leadership in CTTC, COMSOC, and IEEE, and her continued engagement in CTW



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UPCOMING CONFERENCE VENUES

Conference	Location	Date
GC'19	Hawaii (Waikoloa, Big Island)	9-13 Dec 2019
ICC'20	Dublin	7-11 June 2020
GC'20	Таіреі	7-11 Dec 2020
ICC'21	Montreal	14-18 June 2021
GC'21	Madrid	7-11 Dec 2021
ICC'22	Seoul	16-20 May 2022
GC'22	Rio De Janeiro	4-8 Dec 2022
ICC'23	Rome	2023



- ICC'19 Communication Theory Symposium Co-chairs
 - Matthew Valenti (West Virginia University, USA)
 - Justin Coon (Oxford University, UK)
 - Feng Shu (Nanjing University of Science and Technology, China)
- Stats
 - # Submissions: 126
 - Comparison: GC'18 = 130; ICC'18 = 111; ICC'17 = 164; ICC'08 = 258
 - # TPC members: 187; Average TPC member load ≈ 2.7 papers
 - # Acceptances: 50 accepted; 39.6% accept rate
 - 1 paper withdrew after acceptance.
- Sessions
 - 8 oral sessions w/ 5 papers each.
 - 1 interactive session w/ 10 papers.
- Best paper award
 - Symposium chairs nominated 2 papers; award committee picked winner

GLOBECOM 2019 (BIG ISLAND, HAWAII)

GLOBECOM'19 Communication Theory Symposium Co-Chairs:

- Wei Yu, University of Toronto, Canada
- Enrico Paolini, University of Bologna, Italy
- Andrea M. Tonello, University of Klagenfurt, Austria
- Stats
 - # Submissions: 144
 - Comparison: ICC'19: 126; GC'18 = 130; ICC'18 = 111; ICC'17 = 164;
 - # TPC members: 139; Average TPC member load ≈ 2.9 papers
 - # Acceptances: 60 accepted; 41.7% accept rate
- Sessions
 - 7 oral sessions (4 sessions with 5 papers, 3 sessions with 6 papers)
 - 1 interactive session with 22 papers
- Best paper award

ICC 2020 (DUBLIN, IRELAND)

Co-Chairs:

- Harpreet Dhillon, Virginia Tech
- Deniz Gunduz, Imperial College London
- Mark Flanagan, University College Dublin

Final Numbers:

- TPC members recruited: 144
- Papers submitted: 119

Notes about the review process

- Each TPC member was assigned three-four papers for review
- Please submit detailed reviews. It is important for us to know why you liked or disliked the paper (especially for the borderline cases)
- Please submit your reviews on time

GLOBECOM 2020 (TAIPEI CITY, TAIWAN)

- **7-11** December, 2020
- Co-chairs
 - Rui Dinis, Nova Univ. of Lisbon
 - Marco Chiani, Universita di Bologna, Italy
 - Paschalis Sofotasios, Khalifa University of Science and Technology, UAE
- As mentioned in opening remarks, please contact co-chairs to volunteer for the TPC if you are interested.
- Website will go live immediately after GLOBECOM 2019
- The current dates:
- Paper Submission: April 15, 2020
- Acceptance Notification: July 25, 2020
- Camera-Ready: September 1, 2020

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PAST/UPCOMING CTW VENUES

Conference	Location	Date
CTW'19	Sefloss, Iceland	May 27-29, 2019
CTW'20	Banff, Alberta, Canada	May 17-20, 2020
CTW'21	Marbella, Spain	May 2021

IEEE CTW @ ICELAND MAY 27-29, 2019



ORGANIZING COMMITTEE

General Chair

Petar Popovski (Aalborg University, Denmark)

TPC Chairs

- Urbashi Mitra (University of Southern California, USA)
- Erik Larsson (Linkoping University, Sweden)

Local organizing chair

Magnus M. Halldorsson (Reykjavik University, Iceland)

Poster Chairs

- Nuria Gonzalez Prelcic (University of Vigo, Spain)
- Maite Brandt-Pearce (University of Virginia, USA)

Fundraising chair

Marios Kontouris (Huawei, France)

TECHNICAL PROGRAM: KEYNOTES

Keynote 1: 5G for Industry 4.0 – Are we there yet? Andreas Mueller (Bosch and 5G-ACIA)

Keynote 2: Looking anew at what we thought we knew Muriel Médard (MIT)

Keynote 3: Foundational Aspects of Blockchain Protocols Juan Garay (Texas A&M University)

TECHNICAL PROGRAM: SESSIONS

- Session 1: Security in Social Information Systems
 Organizer: Anna Scaglione (Arizona State University)
- Session 2: Resilience for Network Attacks
 Organizer: Bruno Sinopoli (Carnegie Mellon University)
- Session 3: Communications in the Real World: Theory & Experiments Organizer: Howard Huang (Nokia Bell Labs)
- Session 4: Core Communication Theory
 Organizer: Wei Yu ((University of Toronto))
- Session 5: Unconventional Communications: *Emerging Modalities* Organizer: Maite Brandt-Pearce (University of Virginia)

TECHNICAL PROGRAM: PANELS

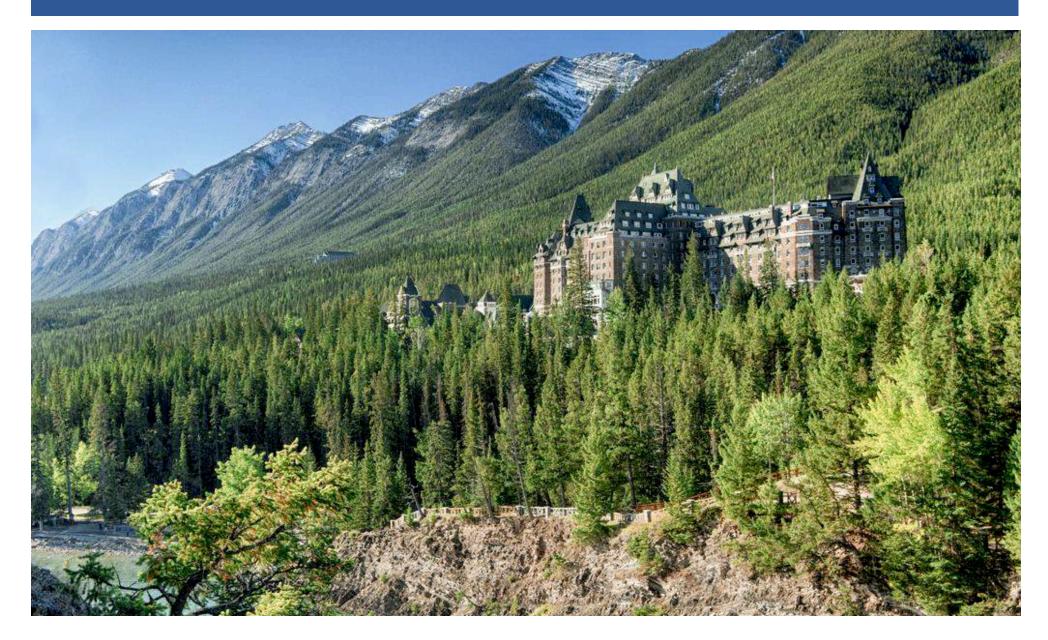
- Panel 1: Emerging IoT Applications That Will Drive 6G and New Communication Theory Problems Organizer: Jeff Andrews
- Panel 2: Machine Learning: Salvation or Illusion? Organizers: Shuguang Cui (University of California, Davis) and Sudharman Jayaweera (University of New Mexico)

STATISTICS AND PATRONS

97 registered participants

Two Golden Patrons Nokia Bell Labs Huawei

IEEE CTW @ BANFF MAY 17-20, 2020



ORGANIZING COMMITTEE

General Chairs

- Andrew Eckford (York University, Canada)
- Julian Cheng (University of British Columbia Okanagan, Canada)

TPC Chairs

- Behnaam Aazhang (Rice University, USA)
- Natasha Devroye (University of Illinois at Chicago, USA)
- Finance Chair
 - Anas Chaaban (University of British Columbia Okanagan, Canada)

Poster Chairs

- Yindi Jing (University of Alberta, Canada)
- Shahram Shahbazpanahi (Ontario Tech, Canada)

Data Competition Chairs

- Nariman Farsad (Ryerson University, Canada)
- Jakob Hoydis (Nokia Bell Labs, France)

Keynote 1: Frank Kschischang University of Toronto, Canada

Keynote 2: Merouane Debbah Huawei, France

Keynote 3: Sennur Ulukus University of Maryland, USA

- Session 1: Neuromorphic sensing, learning, and communications Chair: Osvaldo Simeone (King's College London, UK)
- Session 2: Inference for graph-based information Chair: Negar Kiyavash (Georgia Tech, USA)
- Session 3: Coding for Computing and Learning Chair: Daniela Tuninetti (University of Illinois at Chicago, USA)
- Session 4: Machine Learning and Signal Processing for Network Data Chair: Santiago Segarra (Rice University, USA)
- Session 5: Communication Theory Put into Practice
 Chair: Tara Javidi (University of California San Diego, USA)

Industry Panel 1

5G Use Cases Chair: Ivo Maljevic (TELUS, Canada)

Industry Panel 2

Convergence Bounds and Experimental Rigor: How can we know that machine learning systems will work? Chair: Matt Nokelby (Target, USA)

Poster Session

Deadline: February 24, 2020

Award for best poster

(Reminder: No published proceedings)

Data Competition

Outdoor localization challenge using a real-world dataset Award for best performance

HOW TO GET THERE & WHAT TO DO

How to get there:

Calgary International Airport (YYC) Take the direct shuttle bus <u>or</u> rent a car

What to do (other than hear about world-class research):

Hiking, hot springs, gondola rides, whitewater rafting, golf, mountain biking, wildlife spotting, spas, dining ...

Very family friendly!

EXPECTED COSTS

Registration

Early ComSoc Member Early ComSoc Student	US\$549 US\$299
Early Registration Deadline:	March 14, 2020
Accommodation	
Fairmont Banff Springs Hotel	US\$258/night

Negotiated Rate

(CA\$343/night)



http://ctw2020.ieee-ctw.org/

IEEE CTW'21 @ MARBELLA MAY 30- JUNE 02, 2021



ORGANIZING COMMITTEE

General co-chairs

- Andrea Goldsmith (Stanford University, USA)
- Juan M. Romero-Jerez (Univ. Málaga, Spain)
- TPC co-chairs
 - Mohamed-Slim Alouini (KAUST, Saudi Arabia)
 - F. Javier Lopez-Martinez (Univ. Málaga, Spain)
- Poster Chairs
 - Mahnoosh Alizadeh (UC Santa Barbara, USA)
 - David Morales-Jimenez (Queen's University Belfast, UK)
- Finance chair
 - Mari Carmen Aguayo-Torres (Univ. Málaga, Spain)
- Publicity co-chairs
 - Ana García-Armada (Univ. Carlos III, Spain)
 - Víctor Gil-Jiménez (Univ. Carlos III, Spain)

CURRENT STATUS & UPDATES

Hotel:

Contracts ready to be signed (Hotel - agency - IEEE)

Budget

- Approved with minor changes
- Worst-case estimation based on % from CTW'19
- Registration fee decreased (450\$/475\$/575\$ ComSoc/IEEE/non-member)

Next things to be done

- Invite keynote speakers
- Design technical program sessions (topics/chairs/panels)

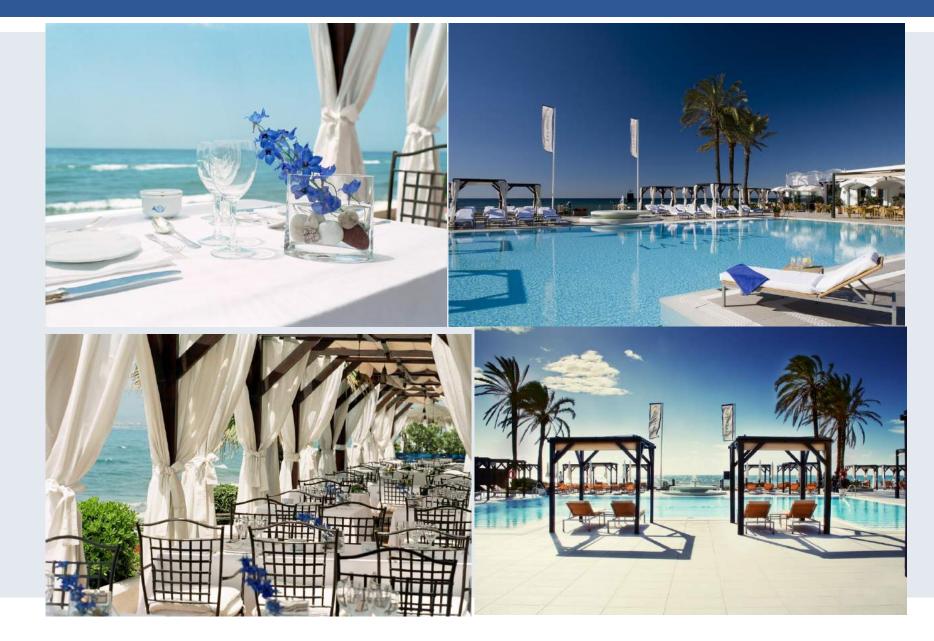
decorrelated with CTW'20

- Contact sponsors
- Social program

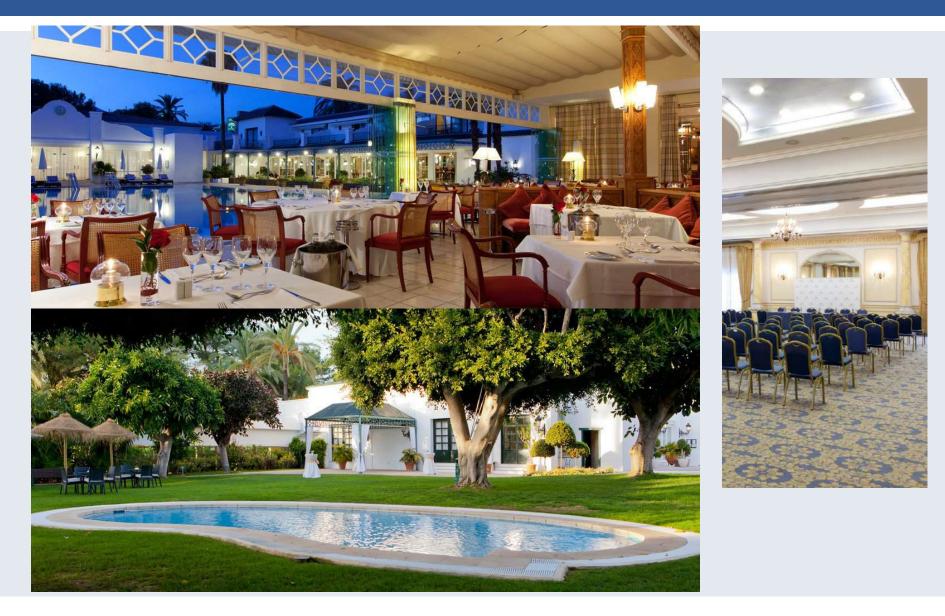
VENUE: LOS MONTEROS MARBELLA HOTEL & SPA (5*GL)

- Regular price (in spring) > 200 €/night (double room)
- Final room prices for CTW'21: (buffet breakfast included. V.A.T included):
 - 180 €/room (double-twin)
 170 €/room (double room for single use)
- Location: 500 m from the sea and Hotel Beach Club (10 minutes walk in urbanized area – the hotel offers transportation)
 - 5 km from Marbella downtown
 - Number of rooms: 173 Spa/ Golf/ Beach club
 - Salon Real: Big meeting room. Capacity for up to 350 people. Will be divided for CTW to have the perfect size.
- Patio rooms: Located around an Andalusian patio. Meetings for 15-50 people
- Reviews: 8,5 in booking.com 4,5/5 TripAdvisor

VENUE: LOS MONTEROS MARBELLA HOTEL & SPA (5*GL)



VENUE: LOS MONTEROS MARBELLA HOTEL & SPA (5*GL)



NEARBY ATTRACTIONS

- Caminito del Rey (Lonely Planet's top experiences 2015)
- Antequera Dolmens & Torcal (UNESCO World Heritage 2017)
- Ronda



NEARBY ATTRACTIONS: MÁLAGA



HOW TO REACH MARBELLA

- Fly to Malaga and then take a taxi (63€), bus (6-8€).
- Flying to Malaga (Direct)
 - Madrid/Barcelona (<1h30)</p>
 - Paris/Rome/Zurich (2h30)
 - London/Amsterdam (3h)
 - Frankfurt/Munich/Berlin (3h)
 - Copenhagen (3h45)
 - Stockholm (4h30)
 - Istanbul (4h40)
 - Moscow (5h30)
 - Montreal (7h30)
 - New York (7h30)
- Flying to Malaga (Connection)
 - Dallas (13h30)
 - Bay Area (14h)
 - Beijing (14h)
 - Tokyo (16h)
 - Hong Kong (17h)

CTW2022 PROPOSAL

- Peter Hong
- (switch slides)

IEEE Communication Theory Workshop 2022 Fulong, New Taipei City, Taiwan

Tony Quek (Singapore University of Technology and Design, Singapore)

> Yao-Win Peter Hong (National Tsing Hua University, Taiwan)

> > **Wei Yu** (University of Toronto, Canada)



Dates

CTW 2022 will be held on May 1 - 4, 2022?
 May 8 - 11, 2022?
 May 29 - June 1, 2022?

2

- No conflict with other Conferences
- ICC May 16 20 @ Seoul, South Korea
- ICASSP May 23 27 @ Singapore
- ISIT June 26 July 1 June 12 - 17
- @ Helsinki, Finland

SPAWC ?

Location

Fulong, New Taipei City, Taiwan





Location

Fulong, New Taipei City, Taiwan

Water activities

Stand Up Paddleboarding (SUP)

- Swimming
- Stand Up Paddleboarding (SUP)
 - Kayaking



Long Dong Wan Cape Trail



Mountain activities

- Cycling
- Hiking

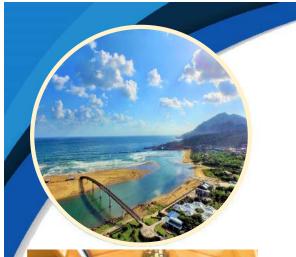
Caoling Historic Trail

Rock climbing



4









Venue Fullon Hotel & Resorts^{****}

- Conference room (classroom style) 102 ~119 m², max. 60~80 participants
- Poster area with great view
- Welcome reception in open air space





6





Hotel

Fullon Hotel & Resorts

- Rooms with view at Fullon Hotel & Resorts
- American breakfast
- Prices (standard rooms): Double occupancy USD195 (EUR172) / night
- Luxury villas are also available









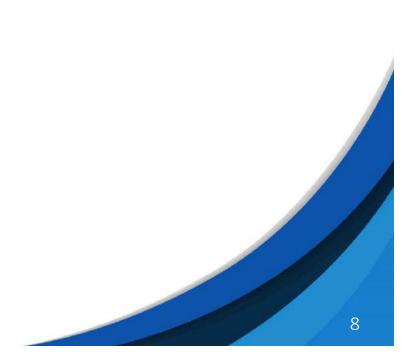


Preliminary Organizing Committee

General Chairs

Tony Q.S. Quek (Singapore University of Technology and Design, Singapore) Yao-Win Peter Hong (NTHU, Taiwan) Wei Yu (University of Toronto, Canada)

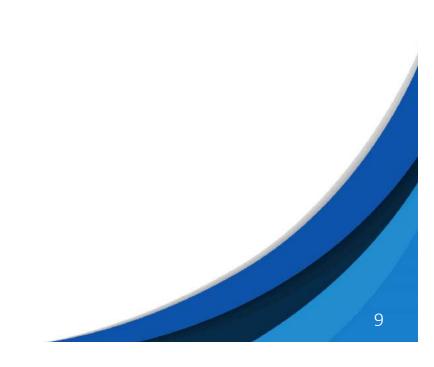
- Technical Program Chairs
- Poster Chairs
- Publicity Chairs
- Fundraising Chair
- Local Organization Chairs
- Advisory Board





Technical Program

• To be determined...



Questions / Suggestions / Comments





SIKS PLACE

Airport <u>MRT</u> > Taipei Main Station <u>Train</u> > Hualien Train Station

<u>Bus</u>> Venue

Other Locations

Taiwan

Other Potential Locations

Farglory Ocean Park, Hualien (Eastern Taiwan)

Hualien Farglory Hotel *****

Room price (standard): USD144 (EUR125) / night

- Conference rooms (classroom style) 171 m², max. 80 participants
- Airport <u>MRT</u> > Taipei Main Station <u>Train</u> Hualien Train Station <u>Bus</u> > Venue







Other Potential Locations

Kenting, Pingtung (Southern Taiwan)







Caesar Park Hotel Kenting







Other

Locations

Sunshine & Beach

- Room price (standard): USD157 (EUR139) / night
- Conference room (classroom style)
- 165 m², max. 96 participants Airport \xrightarrow{MRT} > Taoyuan HSR Station \xrightarrow{HSR} > Zuoying HSR Station \xrightarrow{Bus} > Venue

Taiwan

おお 時間から

IEEE COMSOC STUDENTS COMPETITION

- Communications Technology Changing the World
- Annual student competition for future leaders in communications and networking.
- Recognizes students or teams of students who demonstrate the capacity to improve the lives of people, through the application of communication technology and the development of projects that meet the human needs of people.
- The winning student (or student team) can earn up to US\$2,000.
- Leader or the individual of the First prize nvited to receive the prize at IEEE GLOBECOM 2020 (expenses paid).
- Submission deadline Mid August 2020
- More details can be found in
- <u>https://www.comsoc.org/education-training/ieee-comsoc-student-competition</u>

WE'RE DONE!

- Motion?
- Thanks!