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# Part I  Conference Schedule

**Time:** November 28 to 30, 2016  
**Location:** International Asia-Pacific Convention Center Sanya, Sanya, China  
(三亚亚太国际会议中心暨三亚海航度假酒店)

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Lobby</th>
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<tbody>
<tr>
<td>November 28</td>
<td>14:00-18:00</td>
<td>Registration</td>
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<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Invited Speech Session 1: Laser and Optoelectronics &amp; Semiconductor Physics and Devices</th>
<th>Invited Speech Session &amp; Technical Session 1: Economy, Management and Service Science</th>
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<tbody>
<tr>
<td>November 29</td>
<td>08:30-12:00</td>
<td>Prof. Xuewen Shu, Prof. Yong-gang Zhang, Prof. Jian Wang, Prof. Kun Yang &amp; Prof. W. J. Fan</td>
<td>Prof. Hui-Ming Wee</td>
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<tr>
<td></td>
<td>12:00-13:30</td>
<td>Chair: TBD</td>
<td>Group Photo &amp; Coffee Break: TBD</td>
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<tr>
<td></td>
<td>13:30-18:00</td>
<td>Invited Speech Session 2: Artificial Intelligence &amp; Computer Science</td>
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<tr>
<td></td>
<td>18:00-19:30</td>
<td>Prof. Jixin Ma, Prof. Chih-Min Lin, Dr. Evgeny Puchkov</td>
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<tr>
<td></td>
<td></td>
<td>Chair: TBD</td>
<td>Group Photo &amp; Coffee Break: TBD</td>
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<tr>
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<tr>
<td>November 29</td>
<td>12:00-13:30</td>
<td>TBD</td>
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<tr>
<td>November 30</td>
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<th>Time</th>
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<td>November 30</td>
<td>07:30-12:00</td>
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<td>13:30-18:00</td>
<td>Group Photo &amp; Coffee Break: TBD</td>
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<tr>
<th>Date</th>
<th>Time</th>
<th>One-day Tour (at own expense)</th>
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<tr>
<td>December 1</td>
<td>07:30-18:00</td>
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</table>
Invited Speech Session 1:

Laser and Optoelectronics & Semiconductor Physics and Devices

Invited Speech: Optical fiber gratings and their applications in sensors and lasers

Speaker: Prof. Xuewen Shu, Huazhong University of Science and Technology, China
Time: Tuesday, November 29, 2016
Location: International Asia-Pacific Convention Center Sanya, Sanya, China

Abstract

Optical fiber gratings are in-fiber periodic or quasi-periodic refractive index structures. They can be fabricated with various laser sources such as UV lasers and femtosecond lasers. Optical fiber gratings may be classified into short-period gratings (or fiber Bragg gratings, FBG) and long-period gratings (LPG). Optical fiber gratings have attracted considerable research interests in past two decades since they have important applications in wide research areas such as optical communications, lasers and sensors. In this paper, we will review our past and recent research work on fiber lasers and sensors that employ optical fiber gratings.
Invited Speech: InP-based antimony-free lasers and photodetectors in 2-3 µm band

Speaker: Prof. Yong-gang Zhang, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences

Time: Tuesday, November 29, 2016

Location: International Asia-Pacific Convention Center Sanya, Sanya, China

Abstract

Semiconductor lasers and photodetectors (PDs) in 2-3 µm, part of near-infrared or short-wave infrared wavelength range, have aroused increasing interests for the applications on environmental monitoring, medical diagnostics, image sensing, lidar, and night or fog penetrate vision, etc. In addition to antimony containing materials, the mature epitaxial growth and processing technology, as well as much higher thermal conductance and better properties of InP substrate versus GaSb, makes antimony-free materials mainly the ternary InxGa1-xAs a good candidate to cover this wavelength range. The quantum well lasers and PDs applying InP-lattice-matched InGaAs or related InGaAsP and InAlGaAs quaternary have been well developed for telecom lasers and PDs with wavelength shorter than 1.7 µm. For the ternary InxGa1-xAs at x from 0.53 to 1, the bandgap could be varied from 0.74 to 0.36 eV at 300 K, corresponding to bandgap wavelength of 1.7 to 3.4 µm contain 2-3 µm. For the InxGa1-xAs QW lasers, the emission wavelength can be tailored to 2-3 µm range by increasing the indium content in the QWs, whereas significant strain is introduced into the quantum QWs, and confinement of electrons and photons become poor. Therefore, the design of structure, control of material quality and suppression of dislocations become the main concern. To shift the response of InxGa1-xAs photodetectors to longer wavelength, the indium content in the InGaAs alloy should also be increased, a quite large lattice mismatch between the InGaAs layer and InP substrate need to be relaxed through suitable buffer structure.

In this presentation, our efforts on InP-based antimony-free QW lasers and InxGa1-xAs PDs will be reviewed. For the lasers, novel triangular shape QW was used to increase the lasing wavelength while restricting the strain. Digital alloy technology was used to form the triangular QW during the MBE growth. The lasers with continuous wave lasing from 2.0 to 2.4 µm at room temperature have been achieved [1-2]. To extend the emission wavelength longer, metamorphic scheme was employed. An In0.8Al0.2As template was grown on InP substrate to produce a virtual substrate with larger lattice constant than InP, and then InAs QWs were grown. Lasers with lasing wavelength up to 2.7-2.9 µm have been demonstrated [3-4]. The cutoff wavelengths of InxGa1-xAs PDs have been shifted from 1.7 µm up to 2.9 µm [5], and FPA have been developed for space sensing applications, etc. In those PDs and FPAs InAlAs buffer and cap layers with wider bandgap were adopted, and the n-on-p configuration was applied [6]. The dark current of those PDs have been suppressed effectively by suing superlattice electron barriers in the absorption layer [7].

References:
Invited Speech: On-Chip Optical Data Processing on a Silicon Platform

**Speaker:** Prof. Jian Wang, Huazhong University of Science and Technology, China  
**Time:** Tuesday, November 29, 2016  
**Location:** International Asia-Pacific Convention Center Sanya, Sanya, China

**Abstract**
In this talk, we review our recent research progress in on-chip optical data processing on a silicon platform. By exploiting the linear and nonlinear effects in the designed and fabricated silicon nanophotonic devices, we demonstrate grooming on-chip optical data processing functions such as signaling, demultiplexing, wavelength conversion, data exchange, optical computing, etc.

Invited Speech: Interplay of Topology and Geometry in Fractional Quantum Hall Liquids

**Speaker:** Prof. Kun Yang, Florida State University, USA  
**Time:** Tuesday, November 29, 2016  
**Location:** International Asia-Pacific Convention Center Sanya, Sanya, China

**Abstract**
Fractional Quantum Hall Liquids (FQHL), which are realized in high quality semiconductor-based devices, are the ultimate strongly correlated electron systems, and the birth place of topological phase of matter. Early theoretical work has emphasized the universal or topological aspects of quantum Hall physics. More recently it has become increasingly clear that there is very interesting bulk dynamics in FQHL, associated with an internal geometrical degree of freedom, or metric. The appropriate quantum theory of this internal dynamics is thus expected to take the form of a “quantum gravity”, whose elementary excitations are spin-2 gravitons. After briefly reviewing the topological aspect of FQHL, I will discuss in this talk how to couple and probe the presence of this internal geometrical degree of freedom experimentally in the static limit, and detect the graviton excitation in a spectroscopic measurement.
Invited Speech: Electronic structure and optical properties of dilute nitride bismide semiconductors

**Speaker:** Prof. W. J. Fan, Nanyang Technological University, Singapore  
**Time:** Tuesday, November 29, 2016  
**Location:** International Asia-Pacific Convention Center Sanya, Sanya, China

**Abstract**

In this talk, we will review our recent work on the electronic structure and optical properties of GaAsNb semiconductor quantum wells and quantum dots. The calculation is based on the 16-band k.p method. Band anti-crossing (BAC) and valence band BAC will be applied to 8-band k.p Hamiltonian to form the 16-band k.p method. Strain effect is taken into consideration in the model. The band structure and optical gain spectra will calculated and discussed.
Invited Speech Session 2:

Artificial Intelligence & Computer Science

Invited Speech: Temporal Aspects in Pattern Recognition

Speaker: Prof. Jixin Ma, University of Greenwich
Time: Tuesday, November 29, 2016
Location: International Asia-Pacific Convention Center Sanya, Sanya, China

Abstract

Pattern recognition aims at the operation and design of technologies to pick up meaningful patterns in data. In conventional pattern recognition systems, various patterns are usually represented as isolated collections of data while the temporal relationships between distinct patterns are neglected in most approaches. Generally speaking, temporal representation and reasoning is essential for many computer-based systems. In particular, an appropriate representation and reasoning for temporal knowledge seems necessary for recognizing pattern histories that usually involve rich internal temporal aspects, rather than just distinct patterns. Recognizing pattern histories actually plays an important role in solving problems including explanation/diagnosis, prediction/forecast, planning/scheduling, process management, and history reconstruction, etc. For instance, in the area of medical information systems, a patient’s medical history is obviously very important. In fact, to prescribe the right treatment, the doctor needs to know not only the patient’s current status, but also his/her previous health records. Similarly, in the weather forecasting, without a good understanding of climate phenomena based on past observations, the weather expert cannot make good predictions of the future. The purpose of this speech is to: (a) motivate and explain a topic of emerging importance in Artificial Intelligence; (b) provide an overview on some fundamental issues with respects to temporal representation and reasoning; (c) present a framework for representing and recognizing pattern histories with rich internal temporal aspects.
Invited Speech: Cerebellar Model Neural Networks and their Applications on Control, Classification and Signal Processing

Speaker: Prof. Chih-Min Lin, Yuan Ze University, Chinese Taipei
Time: Tuesday, November 29, 2016
Location: International Asia-Pacific Convention Center Sanya, Sanya, China

Abstract

Based on biological prototype of human brain and improved understanding of the functionality of the neurons and the pattern of their interconnections in the brain, a theoretical model used to explain the information-processing characteristics of the cerebellum was developed independently by Marr (1969) and Albus (1971). Cerebellar model neural network (CMNN) or called as cerebellar model articulation controller (CMAC) was first proposed by Albus in 1974. CMNN is a learning structure that imitates the organization and functionality of the cerebellum of the human brain. That model revealed the structure and functionality of the various cells and fibers in the cerebellum. The core of CMNN is an associative memory which has the ability to approach complex nonlinear functions. CMNN takes advantage of the input-redundancy by using distributed storage and can learn nonlinear functions extremely quickly due to the on-line adjustment of its system parameters. CMNN is classified as a non-fully connected perceptron-like associative memory network with overlapping receptive-fields. It has good generalization capability and fast learning property and is suitable for a lot of applications. This speech will introduce several new CMNN-based adaptive learning systems proposed by me; these systems combine the advantages of CMNN identification, adaptive learning, control technique, signal processing and image classification. In these systems, the on-line parameter training methodologies, using the Lyapunov theorem, are proposed to guarantee the stability and convergence of these systems. Moreover, the applications of these systems in nonlinear systems control, biped robot control, signal processing of communication system, and computer-aided diagnosis of breast nodules are demonstrated.
Invited Speech: Image analysis in microbiology

Speaker: Dr. Evgeny Puchkov, Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russia
Time: Tuesday, November 29, 2016
Location: International Asia-Pacific Convention Center Sanya, Sanya, China

Abstract
This presentation is a review focused on using computer image analysis as a means of objective and quantitative characterizing optical images of the macroscopic (e.g. microbial colonies) and the microscopic (e.g. single cell) objects in the microbiological research. This is the way of making many visual inspection assays more objective and less time and labor consuming. Also, it can provide new visually inaccessible information on relation between some optical parameters and various biological features of the microbial cultures. Of special interest is application of image analysis in fluorescence microscopy as it opens new ways of using fluorescence based methodology for single microbial cell studies. Examples of using image analysis in the studies of both the macroscopic and the microscopic microbiological objects are presented and discussed.
Invited Speech Session & Technical Session 2:

Economy, Management and Service Science

Invited Speech: Sustainable supply chains under carbon cap scheme

Speaker: Prof. Hui-Ming Wee, Chung Yuan Christian University, Chinese Taipei
Time: Tuesday, November 29, 2016
Location: International Asia-Pacific Convention Center Sanya, Sanya, China

Abstract

Increasing environmental concerns together with stricter legislations are forcing industries to take a fresh look at the impact of their supply chain especially its logistics on the environment. This talk discusses the trade-off between total transportation cost and total carbon emission in freight consolidation and containerization problem. The methodology used is a case based approach where we determine the types and quantities of both container and truck used to deliver the goods from origin hub (Kaohsiung, Taiwan) to destination hub (Jakarta, Indonesia) in order to balance cost and emission. We present two scenarios: original policy and carbon cap scenario. The performance of the proposed model for each scenario is evaluated and compared. Based on the results for each scenario, the shipment consolidation and containerization strategy considering carbon cap scheme gives a better result in terms of balancing total transportation cost and total carbon emission compared with the original policy.
# Part III  Technical Sessions

## Technical Session 1: Economy, Management and Service Science

Session Chair: TBD  
TBD  
Tuesday, November 29, 2016

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<tr>
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<tr>
<td>MIE2016_90001</td>
<td>User Acceptance of Personalized and Context-specific Online Advertising.</td>
<td>Sara Denise Ruhrberg</td>
<td>Heinrich-Heine-University</td>
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<tr>
<td>SDEE2016_90004</td>
<td>The proposed South African carbon tax as environmental fiscal reform measure and facilitating factor for sustainable development</td>
<td>Michelle Barnard</td>
<td>North West University</td>
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<tr>
<td>SDEE2016_90007</td>
<td>Bioeconomy: the challenge in the management of natural resources in the 21st century</td>
<td>Alexandra Leitao</td>
<td>Universidade Católica Portuguesa</td>
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<tr>
<td>SDEE2016_90005</td>
<td>Global crisis – transnational ecological management as a building block in regional and global environmental governance</td>
<td>Niel (Willem Daniël) Lubbe</td>
<td>North West University</td>
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<tr>
<td>AFM2016_90004</td>
<td>Mutual fund flows and seasonalities in stock returns</td>
<td>John Lee</td>
<td>University of Auckland</td>
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<tr>
<td>AFM2016_90006</td>
<td>The limits of Balanced Scorecard</td>
<td>Ivo Hristov</td>
<td>University Of Rome Tor Vergata Department of Management and Law</td>
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<td>AFM2016_90003</td>
<td>Executive Compensation and Compensation Risk: Evidence from Technology Firms</td>
<td>Zhongzhi He</td>
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<tr>
<td>PMFS2016_90002</td>
<td>Improvement of the relation between existing techniques of product and food protection and drugs safety management</td>
<td>Ivan Spiridonou</td>
<td>Tor Vergata' University of Rome</td>
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<td>PMFS2016_90004</td>
<td>Implementing Total Quality Management in Education: Compatibility and Challenges</td>
<td>Sohel Zaman</td>
<td>United International University</td>
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<td>LSCM2016_90002</td>
<td>Application of Artificial Neuron Network in Analysis of Railway Delays</td>
<td>Jia Hu</td>
<td>Duisburg-Essen</td>
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<td>LSCM2016_09002</td>
<td>Multi-Objectives Productivity Improvement In Printing Industry Using Lean</td>
<td>Chi On Chan</td>
<td>Hong Kong Shue Yan University</td>
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<tr>
<td>WEC2016_90002</td>
<td>The influence of macroeconomic environment on Australian household debt: An application of Dynamic OLS</td>
<td>Xianming Meng</td>
<td>University of New England</td>
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<tr>
<td>HREM2016_90002</td>
<td>Tertiary Teachers Teaching Professional for Adjust Industry 4.0</td>
<td>Chou Chun-Mei</td>
<td>National Yunlin University of Science and Technology</td>
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# Technical Session: Artificial Intelligence, Robots and Automation

Session Chair: TBD  
Tuesday, November 29, 2016

<table>
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<tr>
<td>ARAT2016_90001</td>
<td>Analysis of Design Directions for Ground Control Station (GCS)</td>
<td>Yongjin Kwon</td>
<td>Ajou University</td>
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<tr>
<td>ARAT2016_90003</td>
<td>Technical Analysis of VTOL UAV</td>
<td>Seunghee Yu</td>
<td>Ajou University</td>
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<tr>
<td>AIR2016_10006</td>
<td>Intelligent diagnostics of the responsible units of the vehicles in the conditions of Arctic and the Far North</td>
<td>Yuri Kabaldin</td>
<td>Nizhny Novgorod State Technical University</td>
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## Technical Session : Computer Science and Applied Physics

Session Chair: TBD  
Wednesday, November 30, 2016

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<tr>
<td>CIACV2016_90001</td>
<td>An Interactive Learning Platform of Geographic Information using Automatic Motion Detection and Localization</td>
<td>Yuan-Hsiang Chang</td>
<td>Chung-Yuan Christian University</td>
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<tr>
<td>ICRSTA2016_90001</td>
<td>Features of behavior and use of Total Electron Content according to Hainan station data</td>
<td>Olga Maltseva</td>
<td>Institute for Physics Southern Federal University</td>
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<tr>
<td>ICRSTA2016_90006</td>
<td>Aerosol decreases in recent years over the Sichuan Basin, Southwest China: A perspective from MODIS observations</td>
<td>Yao Liao</td>
<td>Institute of Guizhou mountain environment and climate research</td>
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<tr>
<td>ICRSTA2016_90005</td>
<td>UAV remote sensing for estimating the growth parameters of white radish and napa cabbage using multi-temporal aerial images and crop surface model</td>
<td>Heesup Yun</td>
<td>Seoul National University</td>
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<td>ICRSTA2016_90004</td>
<td>Color-based crop image Segmentation for monitoring the growth status of garlic (Allium sativum) in UAV remote sensing</td>
<td>Sangjin Jeong</td>
<td>Seoul National University</td>
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<tr>
<td>CSGAD2016_90004</td>
<td>Thermal Simulation for Two-Phase Liquid Cooling 3D-ICs</td>
<td>Yu-Min Lee</td>
<td>National Chiao Tung University</td>
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<tr>
<td>CSGAD2016_90004</td>
<td>Thermal Simulation for Two-Phase Liquid Cooling 3D-ICs</td>
<td>Hong-Wen Chiou</td>
<td>National Chiao Tung University &amp; Industrial Technology Research Institute</td>
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<td>ICSPD2016_90008</td>
<td>Simple Spin-Orbit based device for electron polarization</td>
<td>Yshai Avishai</td>
<td>Department of Physics, and the Ilse Katz Center for Nano-Science</td>
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<tr>
<td>MLPRIS2016_90004</td>
<td>Blur Image Edge to Enhance Zernike Moments for Object Recognition</td>
<td>Chih-Ying Gwo</td>
<td>Chien Hsin University of Science and Technology</td>
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<td>MLPRIS2016_90001</td>
<td>An Experiment on Eversion and Inversion of the Whole Day’s Cloud Classification</td>
<td>Yuanmou Wang</td>
<td>Nanjing University</td>
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Part IV Instructions for Presentations

Oral Presentation

Devices Provided by the Conference Organizing Committee:

- Laptops (with MS-office & Adobe Reader)
- Projectors & Screen
- Laser Sticks

Materials Provided by the Presenters:

- PowerPoint or PDF files

Duration of each Presentation:

- Regular Oral Session: 10-15 Minutes of Presentation
- Plenary Speech: 40-50 Minutes of Presentation
Part V Hotel Information

About Hotel

International Asia-Pacific Convention Center Sanya

(三亚亚太国际会议中心暨三亚海航度假酒店)

International Asia-Pacific Convention Center Sanya is a five star standard luxury hotel, which locates beside the seashore, and is the ideal place for vacation and conference.

The hotel has 254 luxury and comfortable rooms, and 16 conference rooms in different sizes. The conference rooms can accommodate people from 20-1000 and totally square 5400m2.

Housing, dining, recreation facilities… everything needed is ready, Even National initiative seawater swimming poor, sea recreational centre and so on, which make you a pleasant vacation.

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International Asia-Pacific Convention Center Sanya. (三亚亚太国际会议中心: 三亚市三亚湾海坡旅游经济开发区17横路)

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请送我到三亚亚太国际会议中心：三亚市三亚湾海坡旅游经济开发区17横路
Contact Us

Organizing Committee

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