

# 极大与极小

2025年上海交通大学物理学“成长伙伴”国际暑期学校

“The Largest and The Smallest”

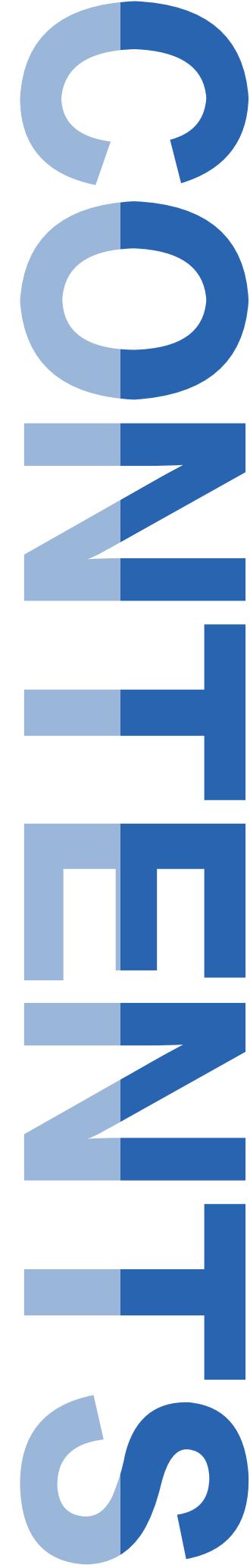
—SJTU International Summer School on Physics (ISSP) 2025



致遠學院  
ZHIYUAN COLLEGE



李政道研究所  
TSUNG-DAO LEE INSTITUTE



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# 日程安排

## Schedule

李政道研究所 (上海市浦东新区李所路1号)

Location:

Tsung-Dao Lee Institute (1 Lisuo Road, Pudong New Area, Shanghai)

Date	Time	Agenda	Location
7.6 Sunday	8:00-14:00	Arrival Hotel check-in starts in the afternoon. Early arrivals can store luggage at the Welcome dinner.	Ji Hotel
	14:00-20:00	Arrival and Check-in	Ji Hotel
7.7 Monday	10:00-11:20	Opening Ceremony & Orientation	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	14:30-17:00	Chalk Talk	Dome Hall, TDLI
	18:30-20:00	reception	Dome Hall, TDLI
7.8 Tuesday	8:00-9:30	Elementary Particle Detection	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Seminar 1	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-15:30	Quantum Field Theory	S500, TDLI
	15:30-16:00	Tea break	S500, TDLI
	16:00-17:00	TDLI Lab tours	
	17:30-18:30	Dinner time	
7.9 Wednesday	8:00-9:30	Elementary Particle Detection	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Astrophysics of Compact Objects, Transients and Exoplanets	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-15:30	Quantum Field Theory	S500, TDLI
	15:30-17:00	Talk with faculty	S500, TDLI
	17:30-18:30	Dinner time	

# Schedule | 日程安排

Date	Time	Agenda	Location
7.10 Thursday	8:00-9:30	Elementary Particle Detection	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Quantum Field Theory	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-17:00	City Tour	
	17:30-18:30	Dinner time	
7.11 Friday	8:00-9:30	Elementary Particle Detection	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Seminar 2	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-17:00	AI for Science	S500, TDLI
	17:30-18:30	Dinner time	
7.12 Saturday	17:30-20:00 (TBC)	Visit to Shanghai Astronomy Museum	
7.13 Sunday		Free Day	
7.14 Monday	8:00-9:30	Geometric phase in solid state physics	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Astrophysics of Compact Objects, Transients and Exoplanets	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-15:00	Seminar 3	S500, TDLI
	15:00-15:30	Tea break	S500, TDLI
	15:30-16:30	Talk with faculty	S500, TDLI
	17:30-18:30	Dinner time	

# Schedule | 日程安排

Date	Time	Agenda	Location
7.15 Tuesday	8:00-9:30	Geometric phase in solid state physics	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Astrophysics of Compact Objects, Transients and Exoplanets	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-15:00	Seminar4	S500, TDLI
	15:00-15:30	Tea break	S500, TDLI
	15:30-16:30	Talk with faculty	S500, TDLI
	17:30-18:30	Dinner time	
7.16 Wednesday	8:00-9:30	Geometric phase in solid state physics	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Astrophysics of Compact Objects, Transients and Exoplanets	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-16:30	Campus Tour	
	17:30-18:30	Dinner time	
7.17 Thursday	8:00-9:30	Geometric phase in solid state physics	S500, TDLI
	9:30-10:00	Tea break	S500, TDLI
	10:00-11:30	Seminar 5	S500, TDLI
	11:30-13:30	Lunch time	Canteen, TDLI
	13:30-16:30	Discuss in groups, summarize, and finish preparing for debriefing	S500, TDLI
	17:30-18:30	Dinner time	
7.18 Friday	8:00-11:30	Student Presentation & Closing ceremony	S500, TDLI
	11:30-13:30	Lunch time	
	13:30-16:30	Free academic exchanges (Optional)	
7.19 Friday	8:00-14:00	Check-out The latest check-out time at the hotel is 14:00 on July 19th.	

**Subjects of Seminars:** Direct Dark Matter Detection, Deep Sea Neutrino Telescope, Muon Physics, Origin of Mass, Dark Photons and Dark Matter, Exoplanets and Alien Civilizations, Black Hole Imaging, Quantum Atmosphere, Superconductivity, Quantum Computing, Quantum Materials and new states of matter, Large Scale Structural Evolution of the Universe, Laboratory Astrophysics, Axion Dark Matter, and AI for Physics.

# 授课教师 | Instructors

## Prof. Anthony Zee



### Course: Quantum Field Theory, an Overview

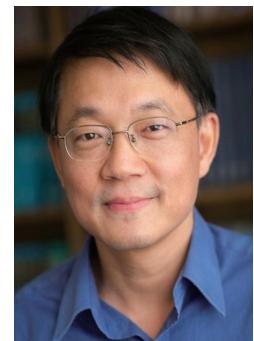
Anothy Zee is a professor in the Department of Physics at the University of California, Santa Barbara and a member of the American Academy of Arts and Sciences. His research interests include high-energy physics, quantum field theory, cosmology, biophysics, condensed matter physics and mathematical physics. He has authored or co-authored more than 200 scientific publications and several books.

## Prof. Dong Lai

### Course: Astrophysics of Compact Objects, Transients and Exoplanets

Dong Lai is a professor at Cornell University and Distinguished Chair Professor at TDLI. His research focuses on theoretical astrophysics, including compact objects, exoplanets, and gravitational wave astrophysics.

He has published over 200 papers and received prestigious awards such as Alfred P. Sloan Fellowship, Simons Fellowship, and the Dirk Brouwer Award in dynamical astronomy from the American Astronomical Society.



## Prof. Jianglai Liu

### Course: Elementary Particle Detection

Jianglai Liu is a Distinguished Professor at SJTU and Deputy Director of the TDLI.

He is the spokesperson for the PandaX dark matter experiment and has received awards including the National Science Fund for Distinguished Young Scholars and the First Prize in Natural Science from the Ministry of Education.



## Prof. Qian Niu

### Course: Geometric phase in solid state physics

Qian Niu is a Distinguished Chair Professor at USTC and former Sid W. Richardson Foundation Chair at UT Austin. His research focuses on quantum Hall effects, quasicrystals, ultracold atoms, spin transport, and graphene materials. He has published around 280 papers with over 33,000 citations and is a Fellow of the American Physical Society.



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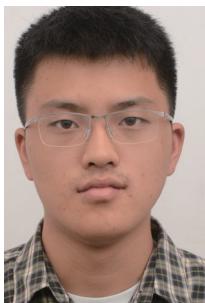
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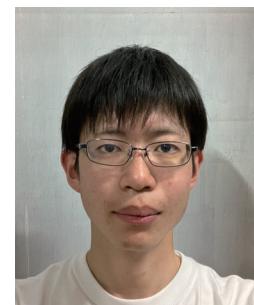
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