



Study and Research Abroad

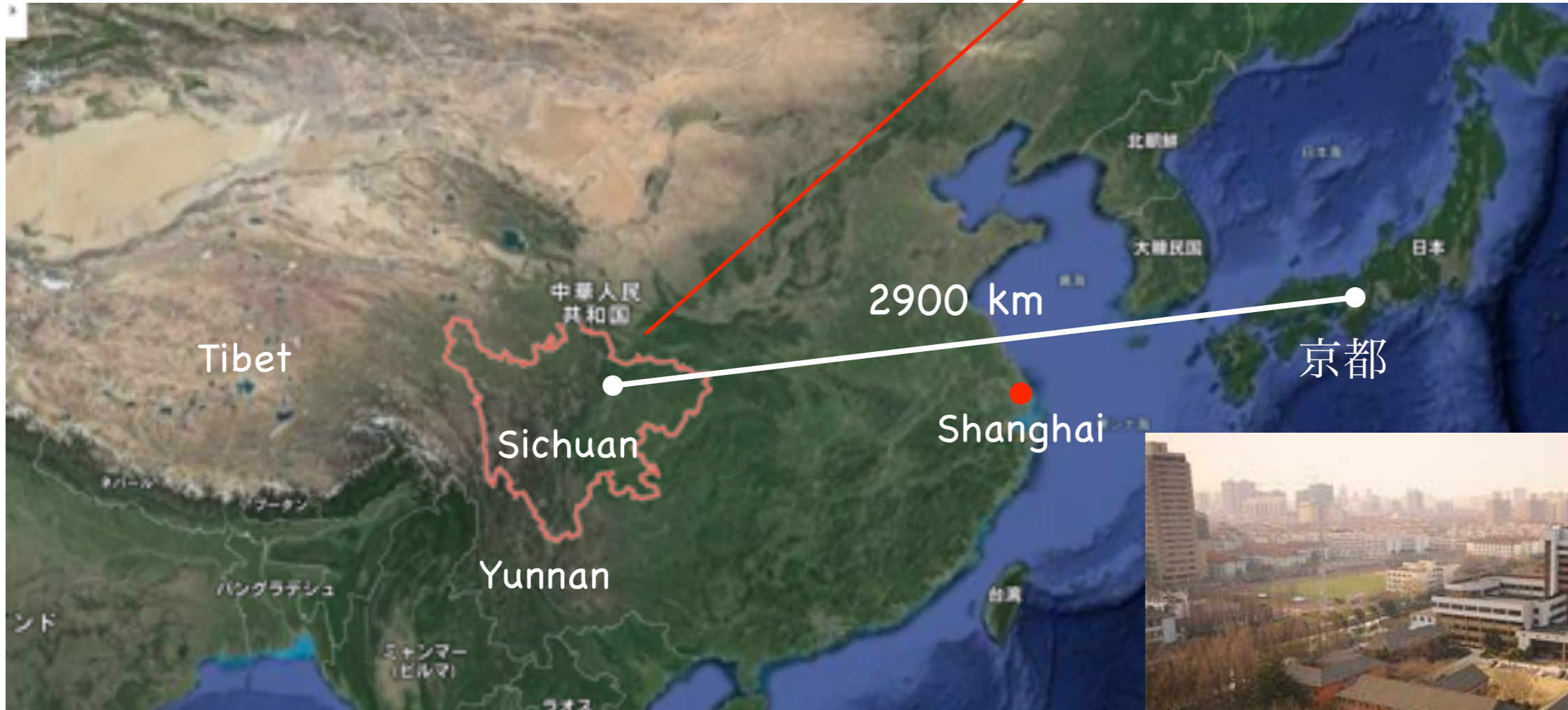
Yajian Hu



Who am I?

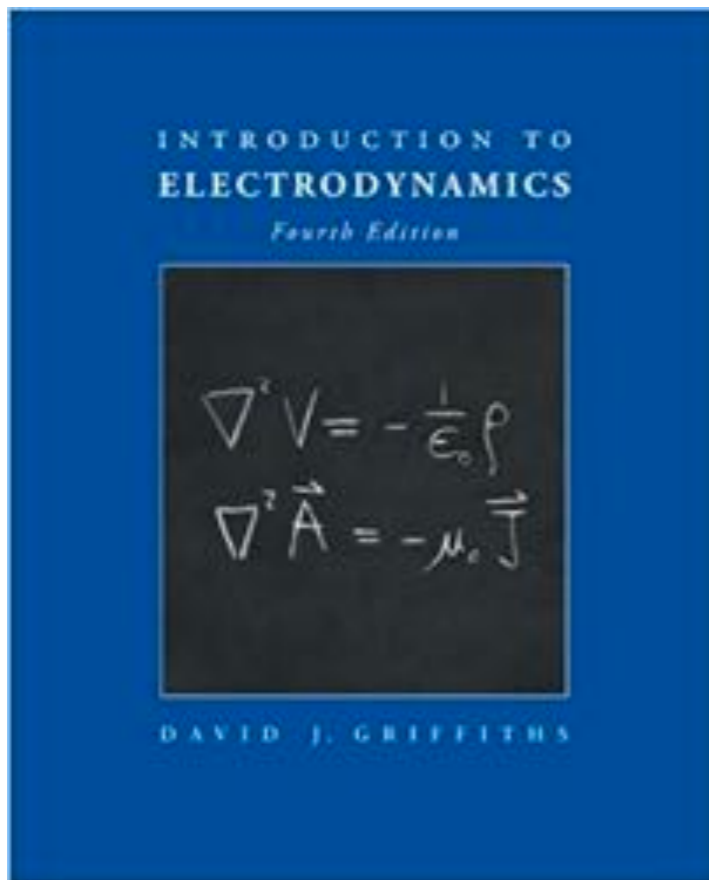
I am from ...

Mianyang, Sichuan Province (四川省绵阳市),
China.



University in Shanghai

- Study physics mainly in Chinese
- Prepare for English examinations (IELTS, TOEFL, GRE)
- English books, podcasts, TV shows...



My first English textbook



Shanghai

But I was not good at speaking...

PhD in Hong Kong

- ◆ Called "Chinese University" but Everything is in English!
(Lectures, notes, textbooks, documents ...)
- ◆ Talk to my supervisor and other students in English
- ◆ In Life - Diverse culture in Hong Kong (Cantonese, Mandarin, English ...)



香港中文大學
The Chinese University of Hong Kong



Hong Kong

Come to Japan

◆ Why?

- Got an offer from Okinawa Institute of Science and Technology
- I like J-pop music, TV shows etc.

◆ Now

- Postdoc in Maeno group

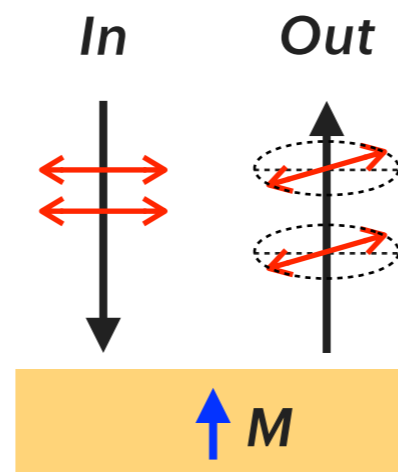
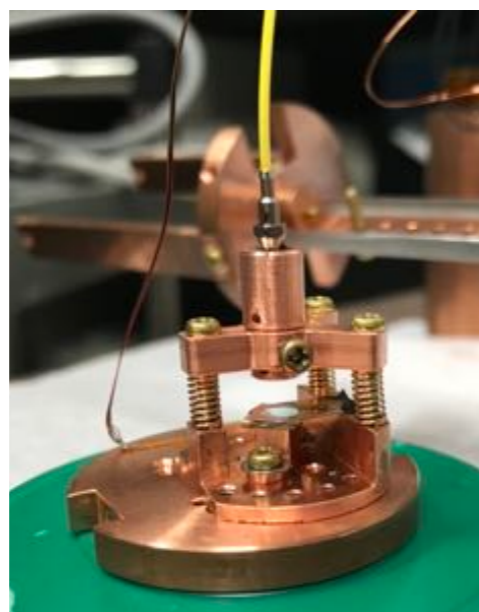
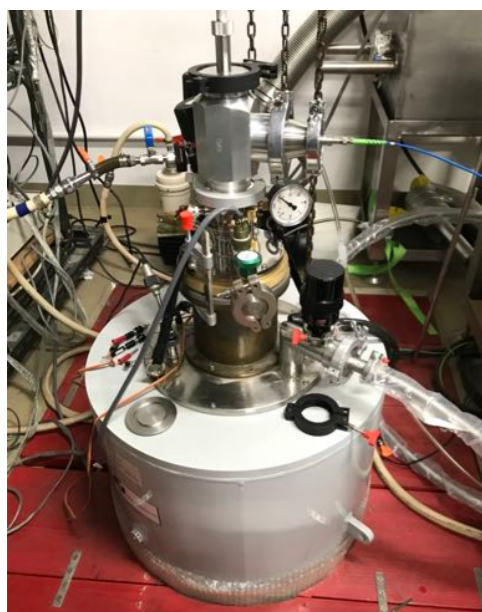


A group photo at OIST

Come to Japan

- ◆ Why?
 - Got an offer from Okinawa Institute of Science and Technology
 - I like J-pop music, TV shows etc.
- ◆ Now
 - Postdoc in Maeno group

Kerr effect of superconductors



びわ湖



有頂天家族, Chinese version

English in my life



Traveling

暖かそうなセーターを着ています。
あたたかそうなおうたーをきています。
She is wearing a warm-looking sweater.

In many そうです sentences, the guesswork is done on the basis of visual impressions. It is wrong, however, to assume that そう is linked only to the visual medium. We use そうです when we lack conclusive evidence. (For example, we say an apple is おいしいそう before we have had the chance to taste it. Once we have tasted it, we say おいしい.) With an adjective for which visual evidence is crucial, such as きれいな, we do not use そう and say that something is きれいです, if it looks pretty; we already have enough evidence to conclude that it is pretty.

4 ~てみる

You can use the *te*-form of a verb plus the helping verb みる to express the idea of "doing something tentatively," or "trying something." You are not sure what the outcome of your action will be, but do it and see what effect it might have.

漢字がわからなかったので、日本人の友だちに聞いてみました。
かなじがわからなかったので、にほんじんのおともだちにきいてみました。
I did not know the kanji, so I tried asking a Japanese friend of mine.

友だちがあのお店のかきはおいしいと言っていましたから、今度食べてみます。
ともだちがあのお店のかきはおいしいと言っていましたから、こんどたべてみます。
My friends say that the cake at the shop is good. I will have a piece one of these days (and see if it really lives up to its reputation).

みる comes from the verb 見る, and conjugates as a regular *ru*-verb. Unlike the main verb 見る, however, ~てみる is always written in hiragana.

Learning Japanese through English

Entropy Scaling Law and the Quantum Marginal Problem
 Isaac H. Kim
 Phys. Rev. X **11**, 021039 (2021) – Published 20 May 2021
 A new method to compute physical properties of interacting many-body quantum systems can do so exponentially faster than other techniques.
[Show Abstract](#)

Relationship between Transport Anisotropy and Nematicity in FeSe
 Jack M. Bartlett, Alexander Steppke, Suguru Hosoi, Hilary Nood, Joonbum Park, Carsten Timm, Takasada Shibauchi, Andrew P. Mackenzie, and Clifford W. Hicks
 Phys. Rev. X **11**, 021038 (2021) – Published 19 May 2021
 Resistive anisotropy grows then shrinks following the onset of electronic nematicity in FeSe, a key observation of how the electronic structure of FeSe changes as nematicity develops.
[Show Abstract](#)

SCIENCE ADVANCES | RESEARCH ARTICLE

OXFORD MASTER SERIES IN CONDENSED MATTER PHYSICS

Superconductivity, Superfluids and Condensates

James F. Annett

PHYSICS

Giant, unconventional anomalous Hall effect in the metallic frustrated magnet candidate, KV₃Sb₅

Shuo-Ying Yang^{1*}, Yaojia Wang^{1*}, Brenden R. Ortiz², Defa Liu¹, Jacob Gayles^{3,4}, Elena Derunova¹, Rafael Gonzalez-Hernandez^{5,6}, Libor Šmejkal^{6,7,8}, Yulin Chen⁹, Stuart S. P. Parkin¹, Stephen D. Wilson², Eric S. Toberer¹⁰, Tyrel McQueen¹¹, Mazhar N. Ali^{1†}

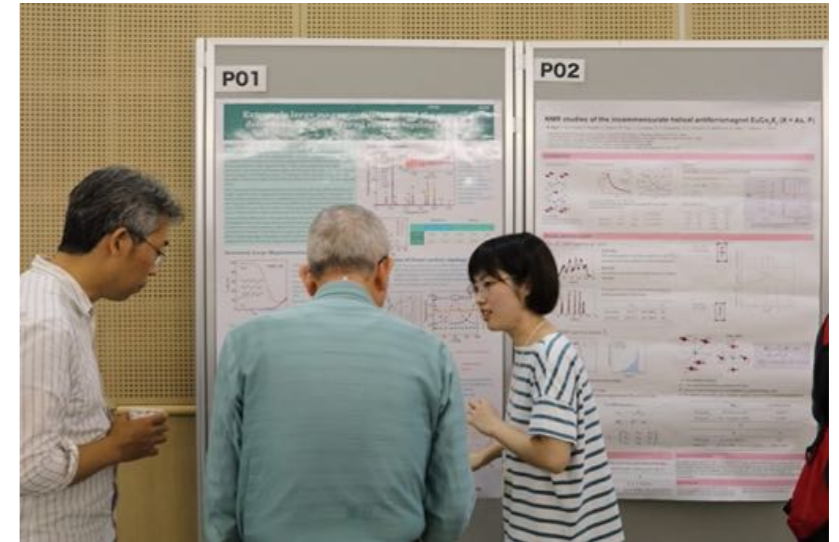
The anomalous Hall effect (AHE) is one of the most fundamental phenomena in physics. In the highly conductive regime, ferromagnetic metals have been the focus of past research. Here, we report a giant extrinsic AHE in KV₃Sb₅, an exfoliable, highly conductive semimetal with Dirac quasiparticles and a vanadium Kagome net. Even without report of long range magnetic order, the anomalous Hall conductivity reaches 15,507 Ω⁻¹ cm⁻¹ with an anomalous Hall ratio of ≈ 1.8%; an order of magnitude larger than Fe. Defying theoretical expectations, KV₃Sb₅ shows enhanced skew scattering that scales quadratically, not linearly, with the longitudinal conductivity, possibly arising from the combination of highly conductive Dirac quasiparticles with a frustrated magnetic sublattice. This allows the possibility of reaching an anomalous Hall angle of 90° in metals. This observation raises fundamental questions about AHEs and opens new frontiers for AHE and spin Hall effect exploration, particularly in metallic frustrated magnets.

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- English is a common language in Science.
- Research articles, books ...
- Communicate with others

Communicate with Researchers around the World

- ◆ International conferences
 - Tell people what you are doing by oral or poster presentation
 - Discuss with others



A poster presentation



Prague
2017



Conference
before Covid

A screenshot of the APS March Meeting 2021 website. The header includes the APS logo and the text 'MARCH MEETING 2021 MARCH 15-19 ONLINE'. A navigation menu at the top right lists 'HOME', 'REGISTRATION', 'PROGRAM', 'RESOURCES', 'STUDENTS', and 'EXHIBITORS'. The main content area features a large graphic of a circular pattern with a central blue square, overlaid on a blue background. To the right of the graphic, the text reads 'Virtual Platform Now Available' in large blue letters. Below this, a smaller text block says 'Join the 2021 APS March Meeting for access to scientific sessions, events for students, industrial and applied physics events, tutorials, and Physical Review journals events.' At the bottom right, there is a red button with the text 'Join the March Meeting'.

Unfortunately now most
conferences are online...

Communicate with Researchers around the World

◆ Experiments at different facilities



Sometimes we need to go to other laboratories to do experiments



Spring-8, Japan



BL35XU

Communicate with Researchers around the World

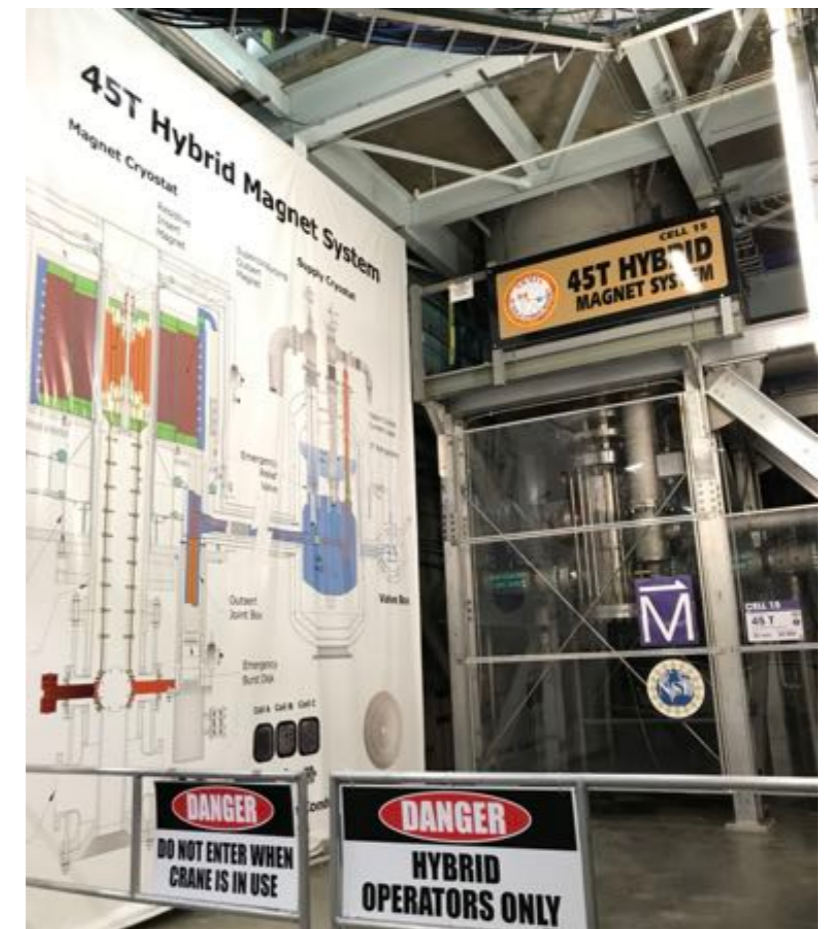
- ◆ Experiments at different facilities



High magnetic field laboratory at Los Alamos and Tallahassee, US



Landscape in New Mexico



Lab at Tallahassee

Take home message

English is very helpful

Travel, study abroad, work etc.

Learning: Books, podcasts, TED talks etc.

Talk more and you will get used to it soon!

Questions ?