

IMPERIAL



JSPS

Pre-departure Seminar

JSPS Summer Programme 2026

Alexander Wright
27/05/2026



My research at UTokyo

Imaging spin-waves in magnetic
metamaterials

Imaging spin-waves in magnetic metamaterials

Dr. Tomosato Hioki & Prof. Eiji Saitoh

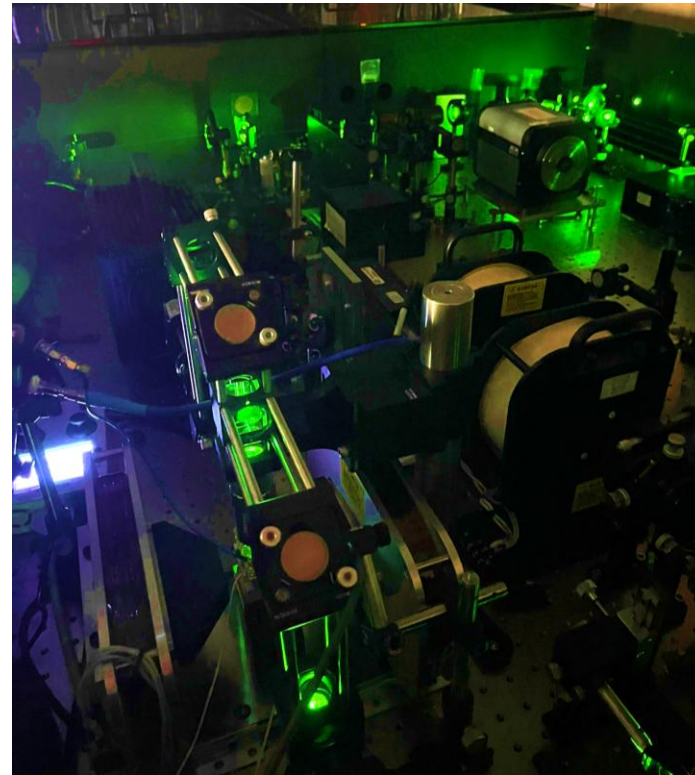
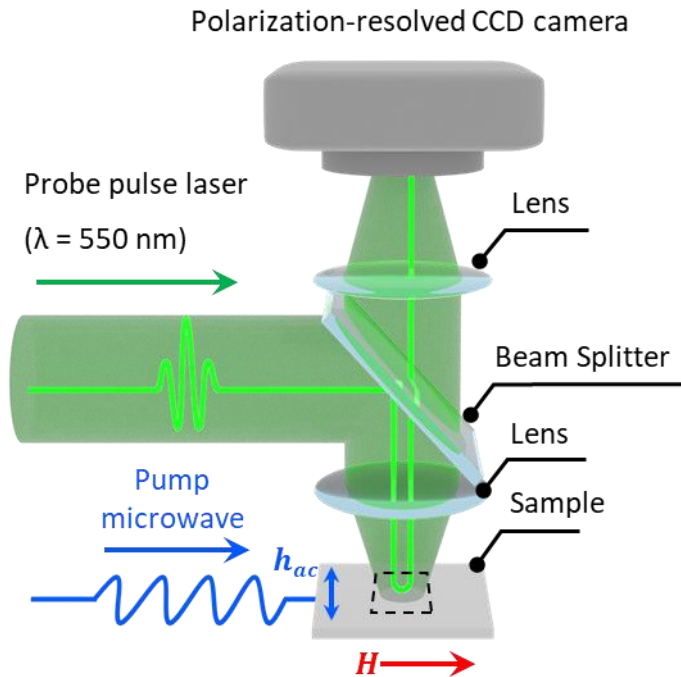


Why UTokyo?

Time-Resolved, Wide-Field, Magneto-Optical Kerr Effect microscope

⇒ Measure tiny changes in magnetisation

⇒ Sub-micrometer & picosecond precision



Imaging spin-waves in magnetic metamaterials

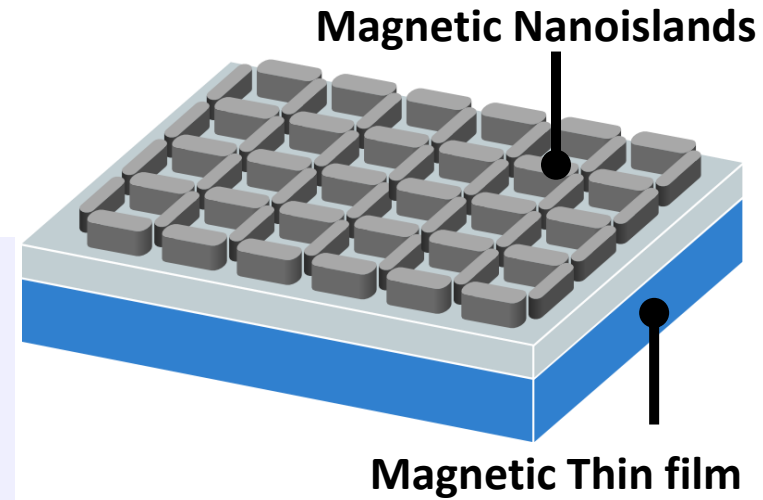
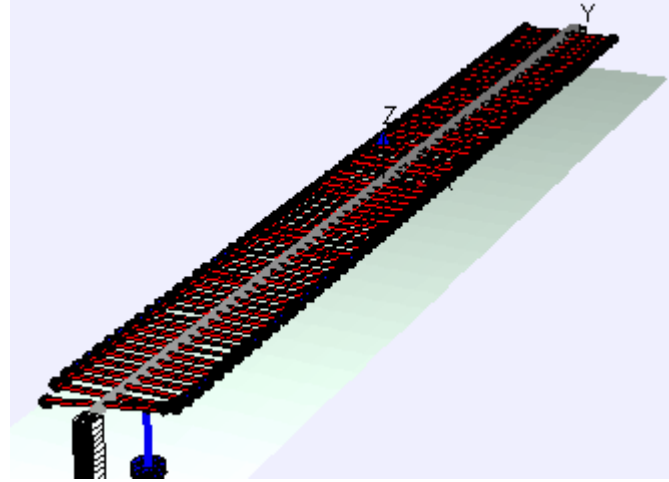
Dr. Tomosato Hioki & Prof. Eiji Saitoh

What we wanted to do

- *Arrays of Magnetic Nanoislands*
 - *How do they interact on the nanoscale?*
 - *How do they affect a nearby magnetic film?*
 - *What does their magnetic resonance look like?*
 - *Frequency? Spatial character? Spin-waves*

Why did we want to do it?

- *They're great for computation*
 - *Resonant frequencies in the GHz – telecoms*
 - *Wavelengths on nanometre scale – we can miniaturise them!*
 - *Great for non-conventional, brain-inspired computing*



ARTICLES

<https://doi.org/10.1038/s41565-022-01091-7>

nature
nanotechnology



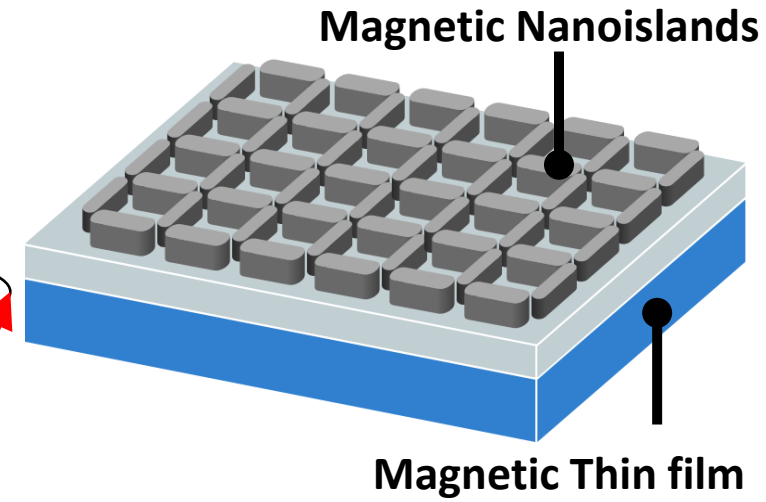
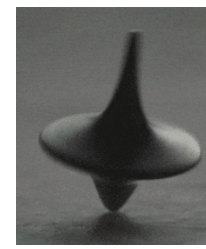
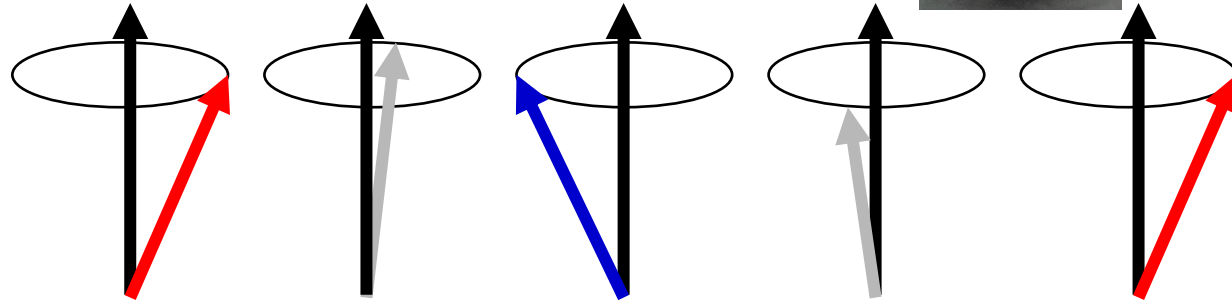
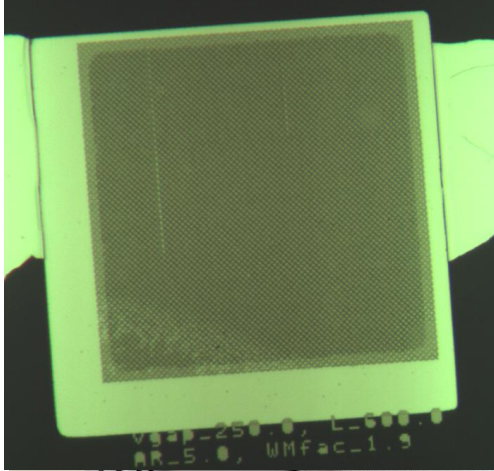
Reconfigurable training and reservoir computing in an artificial spin-vortex ice via spin-wave fingerprinting

Jack C. Gartside^{1,7}✉, Kilian D. Stenning^{1,7}, Alex Vanstone^{1,7}, Holly H. Holder¹, Daan M. Arroo^{2,3}, Troy Dion^{4,5}, Francesco Caravelli⁶, Hidekazu Kurebayashi⁴ and Will R. Branford^{1,3}

Imaging spin-waves in magnetic metamaterials

Dr. Tomosato Hioki & Prof. Eiji Saitoh

What we did

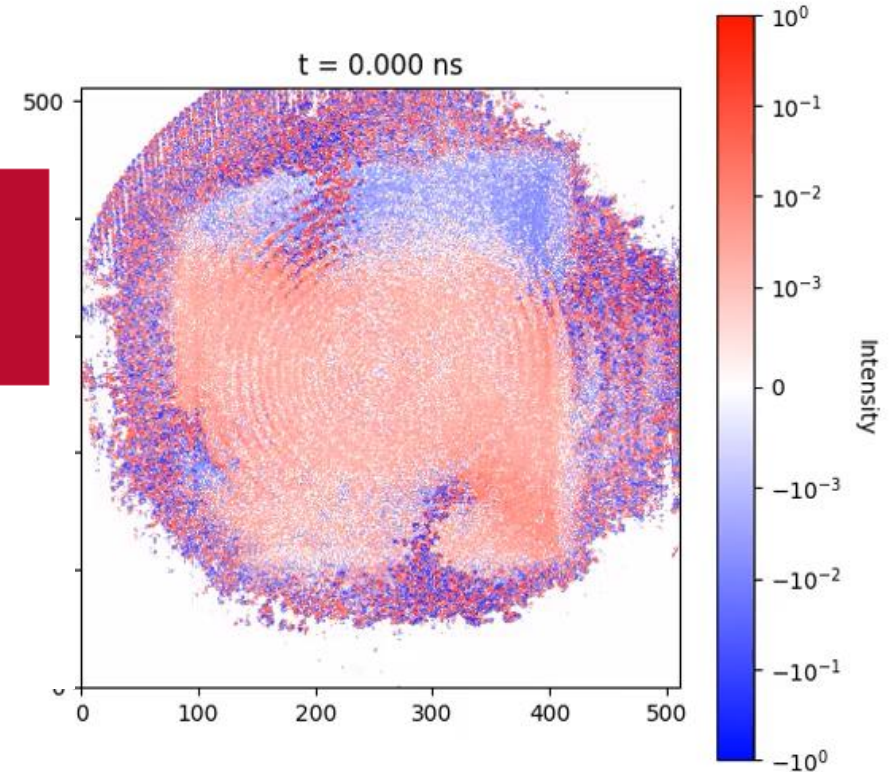


Polarization-resolved CCD camera

THE
ROYAL
SOCIETY

Letter of Offer

Date: 06 March 2026



Your Summer Fellowship

What to expect & advice

Orientation Week

What to expect

- Introduction to Japan & the Summer Programme
 - Talks on Japanese History & Culture
 - Language Lessons
 - Japanese Food
 - Culture Day: Tea ceremony, origami, calligraphy
 - Poster Conference

Advice

- Make the most of all the cultural opportunities
- Talk to fellows from other countries
- Poster tubes are fine as hand luggage
- Check the poster abstract deadline
- (Don't go a for a morning run – it's hot, humid and hilly...)



S O K E N D A I

Homestay

What to expect

- Friday-Sunday staying with a family
- Exposure to ordinary Japanese life
- Everyone's experience will be different
 - Different language abilities
- It's also an opportunity for them to experience a different culture
 - Think what you can bring to them!

Advice

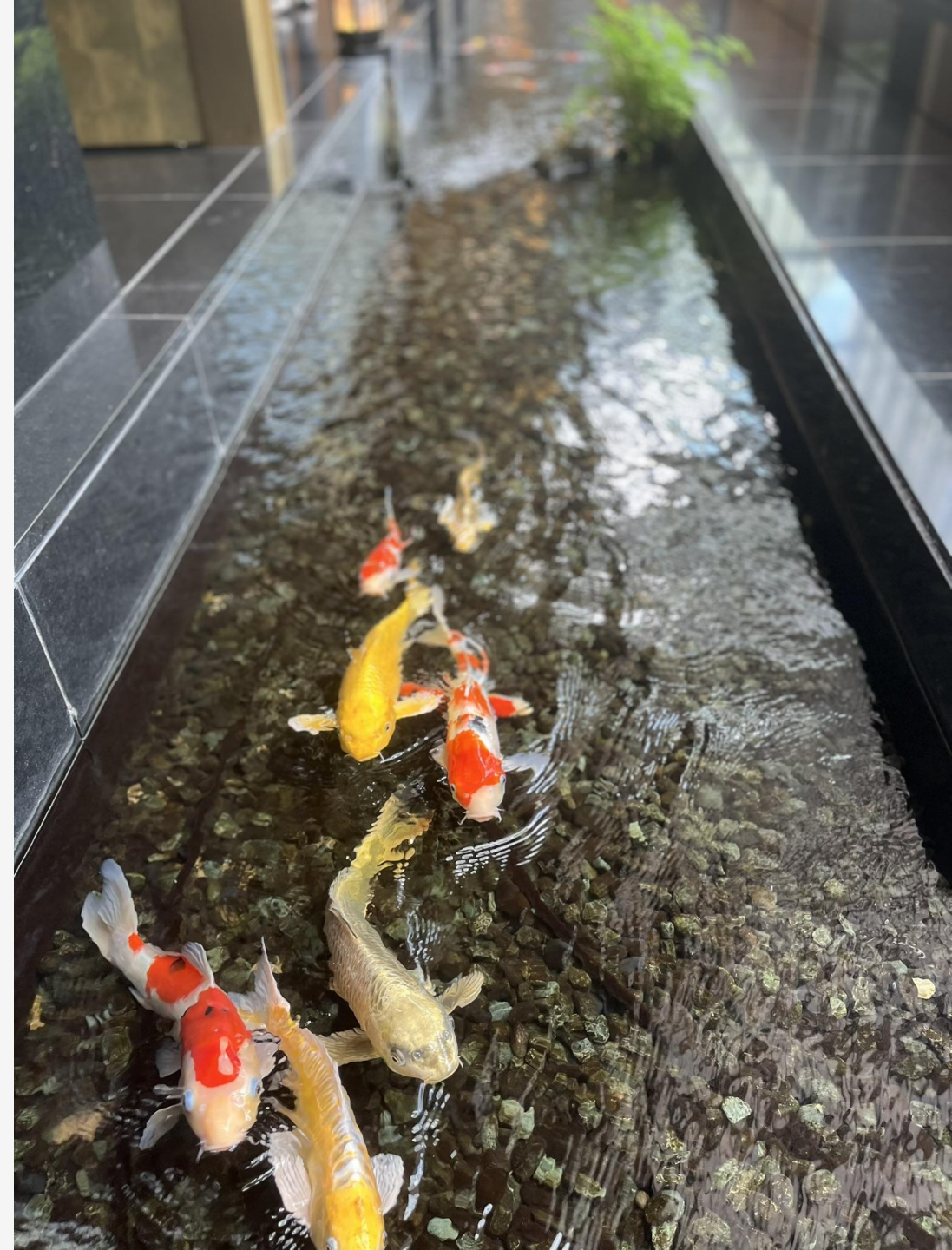
- Do it!
 - It's a rare opportunity that not everyone gets.
- Think ahead of suggestions of you'd like to get out of it
 - Places to visit, learning to cook Japanese food, practising language
- Bring gifts



Administration

Visas, money, E-sim

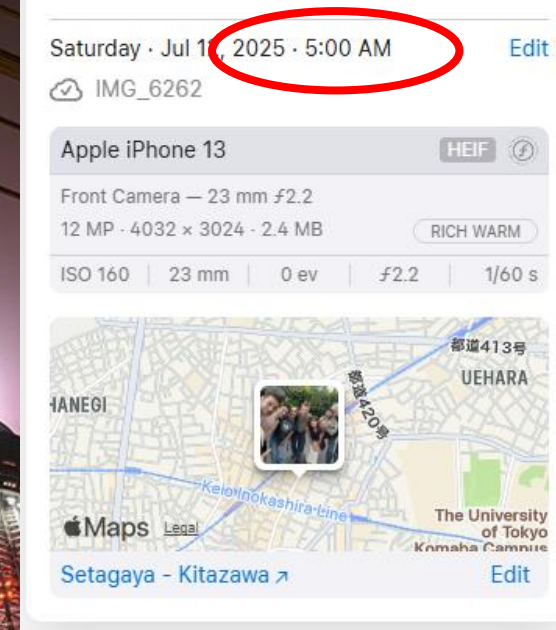
- **Visa** – depends on the institution
 - Get it done asap (if not already).
 - Certificate of Eligibility
 - The rest should be smooth
 - Host's administration office can help!
- **IC/Suica**
 - Travel card (metro, some trains)
 - Also in some shops and restaurants (but not all!).
 - Apple Wallet or physical
- **Stipend**
 - Cover rent & day-to-day expenses
 - Take some pocket money for fun stuff
 - Likely in cash or bank transfer *via* Wise
 - Load cash onto your (physical) IC card
- **Wi-Fi/Mobile Data**
 - Get an e-Sim – mobile data is very good in most places
 - Japanese phone number?
Could be useful e.g. buying events tickets online



Travel

Luggage, trains, metro

- **Splitting luggage**
 - Drop your luggage at the airport to ship to your accommodation on a certain date
 - Saves you taking two big suitcases to Sokendai and back.
- **Trains & Train stations**
 - Confusing and overwhelming (to a foreigner)!
 - Leave plenty of time.
 - Buy your tickets at the station
 - Separate reservation ticket?
 - Just ask for help in the station!
- **The last metro** – usually around midnight – ***don't miss it!***
 - Maps has a feature to tell you when the last one is



Culture

Good manners/Things to know

- Practice your bowing
- Shoes off inside
 - In the home, temples, office/lab
- Wait for the signal to cross the road
- Don't talk loudly on the metro
- Business cards
 - Bring some
 - Give and receive with two hands
- “*Sumimasen!*” – You'll use it a lot!
- Bring souvenirs
 - Home stay/host research group

Be polite and respectful, try your best and learn as you go :)



Research Culture

(Depends on the research group)

- Settle in, get your bearings
- Hierarchy of respect
- Shoes off in the office/lab
- Be prompt
- Culture for long working hours
 - But they don't necessarily expect you to do the same!
- Be independent
- Make the most of the time!
 - Use equipment or resources you don't have access to
 - Ask questions
 - Network with researchers



Enjoy the Food!



Final advice

- Obon holiday – 13th – 16th August
 - Tourist things will be busy
 - University will be closed
 - There will be festivals around – Go see one
- It's not sumo season, so no tournaments
 - But they do a summer tour!
- JSPS fellows community
 - We had a Whatsapp community
 - People shared plans for trips, evening meals & drinks, sightseeing
 - *Fuji hike, Nikko weekend trip, Baseball game, Sumo, Universal Studios/Disney, Tokyo Skytree*
 - Join the Alumni Association
 - Networking events + Fellowship Opportunities
- **Say yes to every opportunity**



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Enjoy your fellowship!

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