

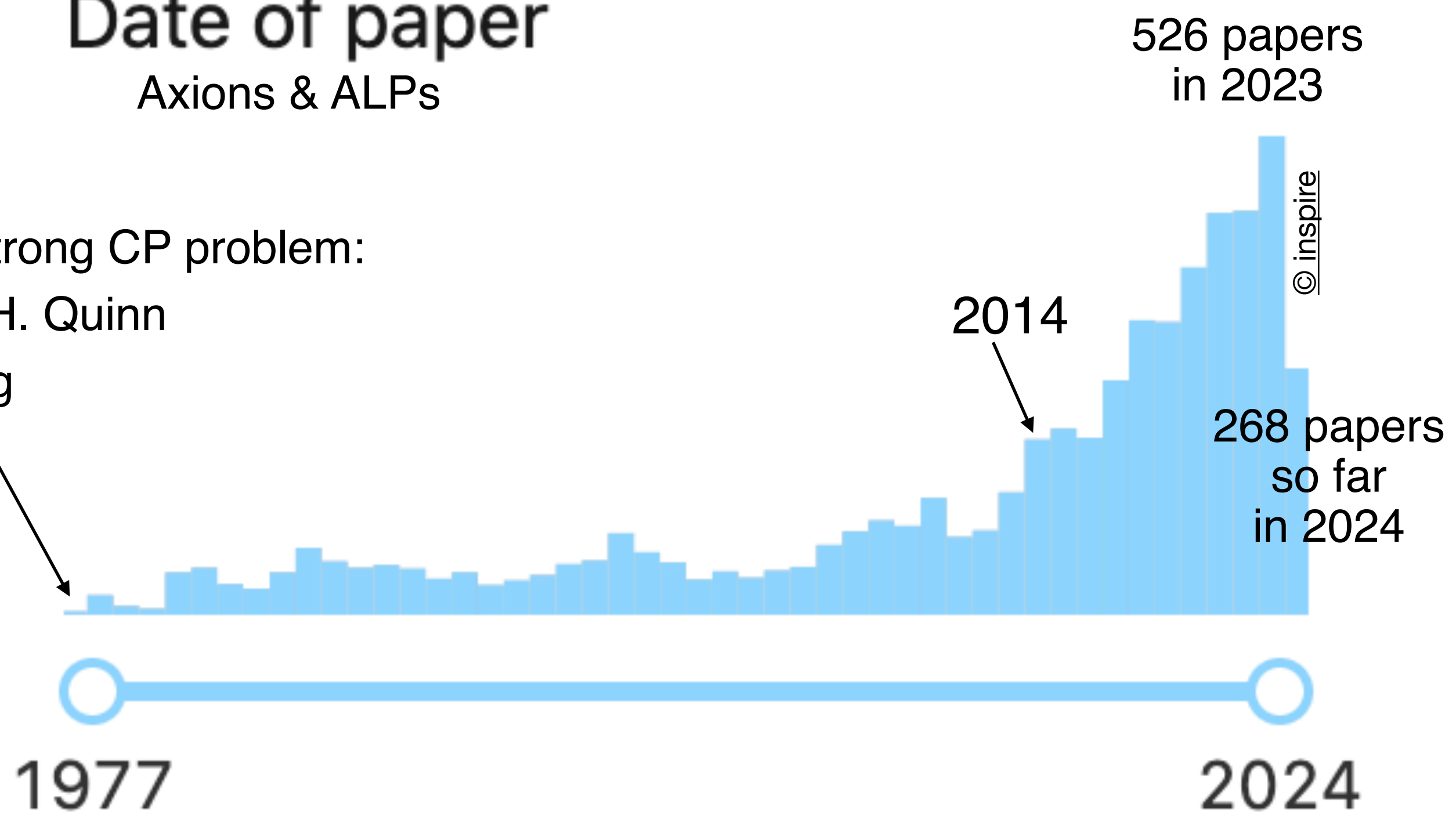
The Axion Quest conference

Presentation of the scientific programme

Why a conference dedicated to axion searches?

Date of paper Axions & ALPs

Solve the strong CP problem:
 R. Peccei, H. Quinn
 S. Weinberg
 F. Wilczek



Author

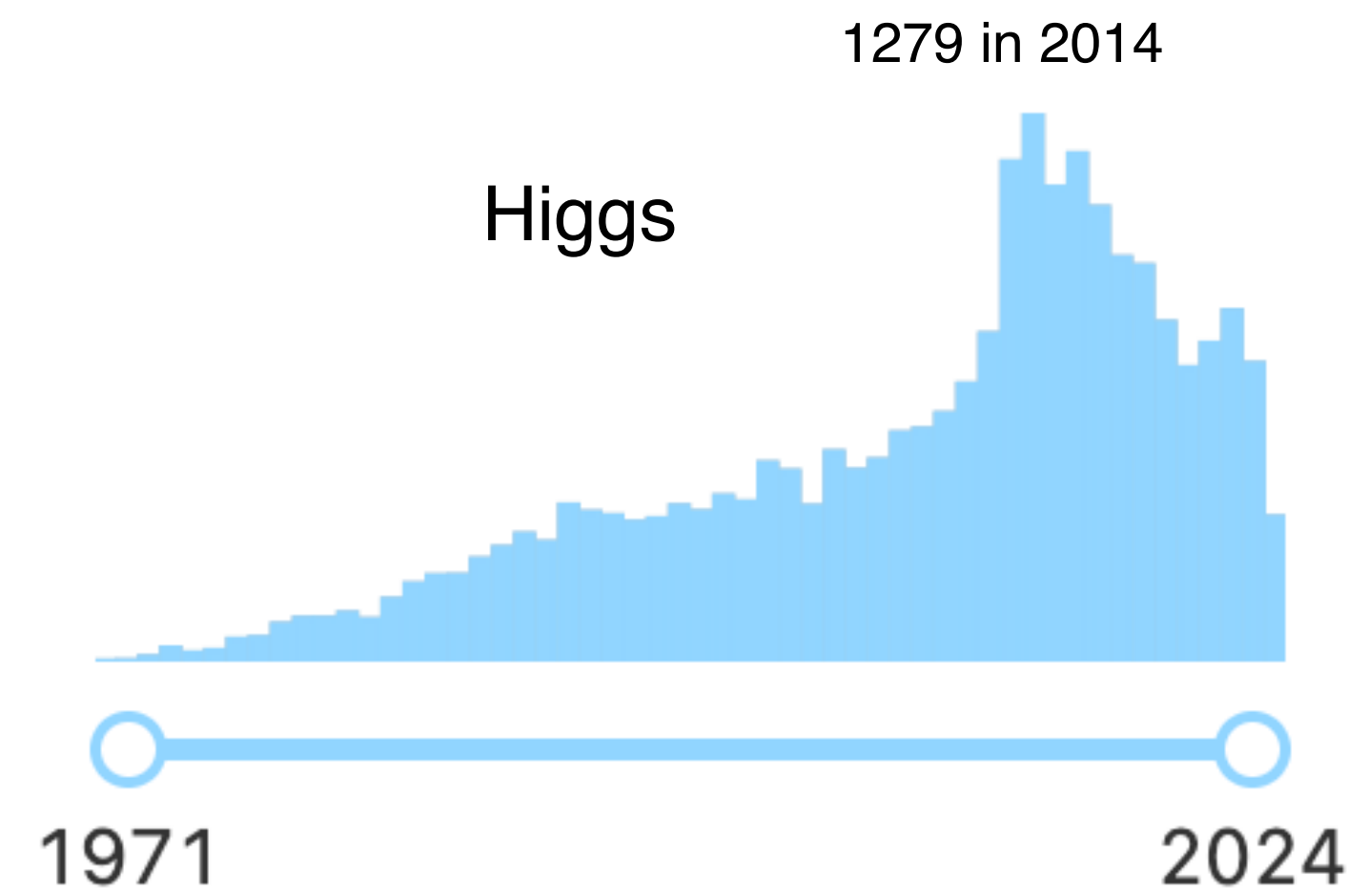
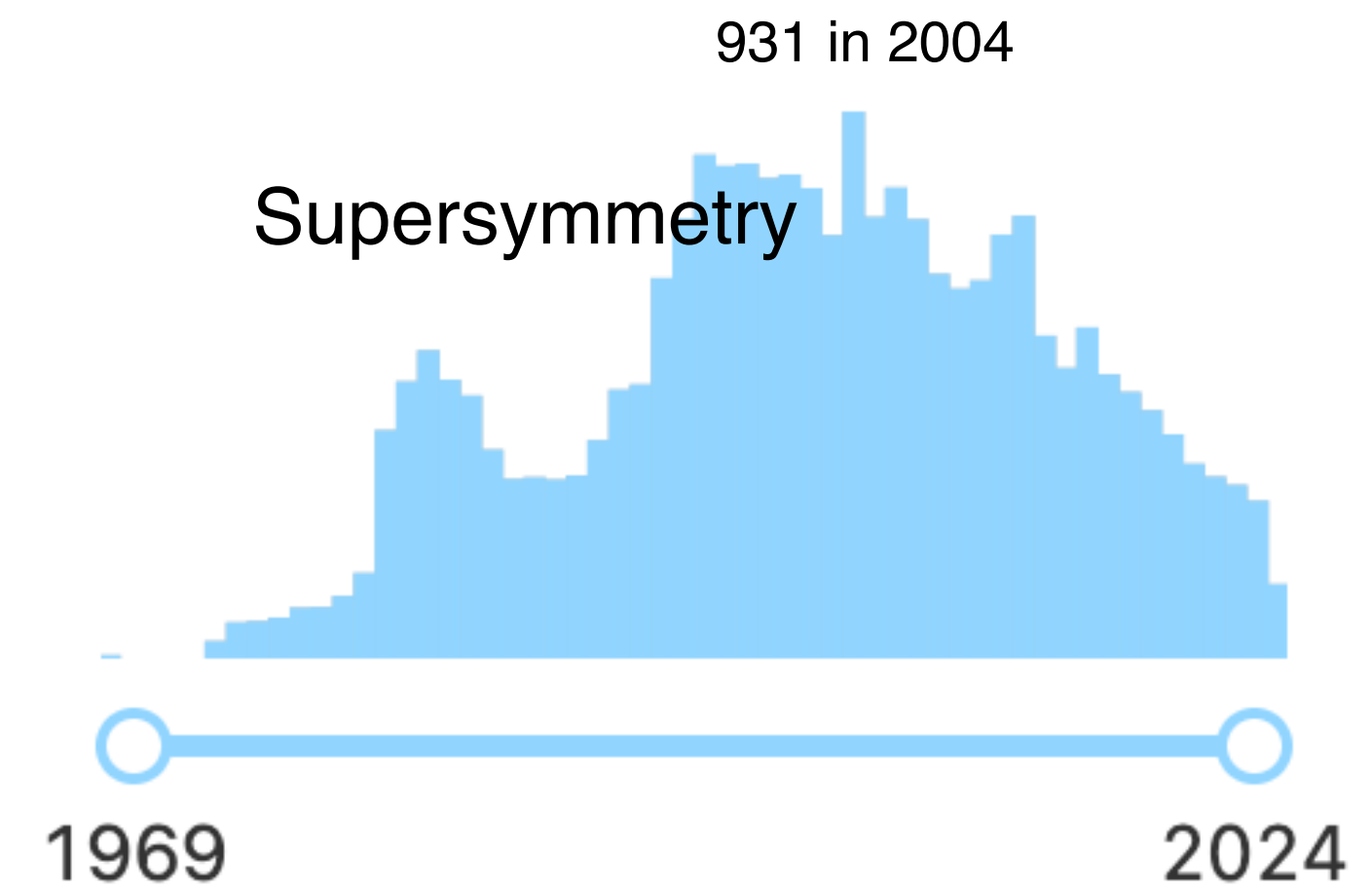
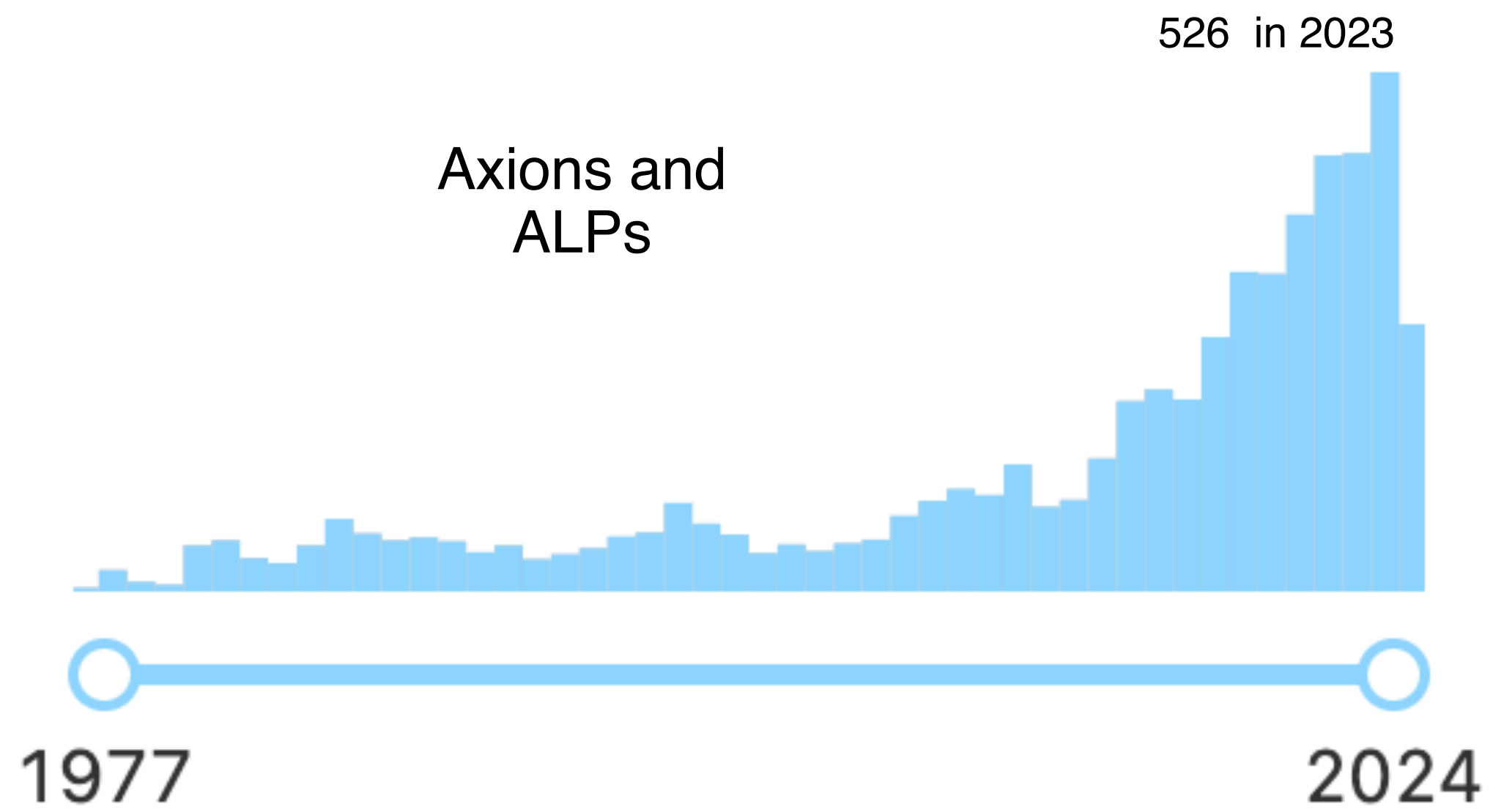
<input type="checkbox"/>	Yannis K. Semertzidis	136
<input type="checkbox"/>	Georg G. Raffelt	114
<input type="checkbox"/>	Pierre Sikivie	113
<input type="checkbox"/>	Konstantin Zioutas	96
<input type="checkbox"/>	Igor Garcia Irastorza	94
<input type="checkbox"/>	Karl A. van Bibber	92
<input type="checkbox"/>	Jihn E. Kim	86
<input type="checkbox"/>	Javier Redondo	79
<input type="checkbox"/>	Theopisti Dafni	72
<input type="checkbox"/>	Thomas Papaevangelou	69

Show 90 more

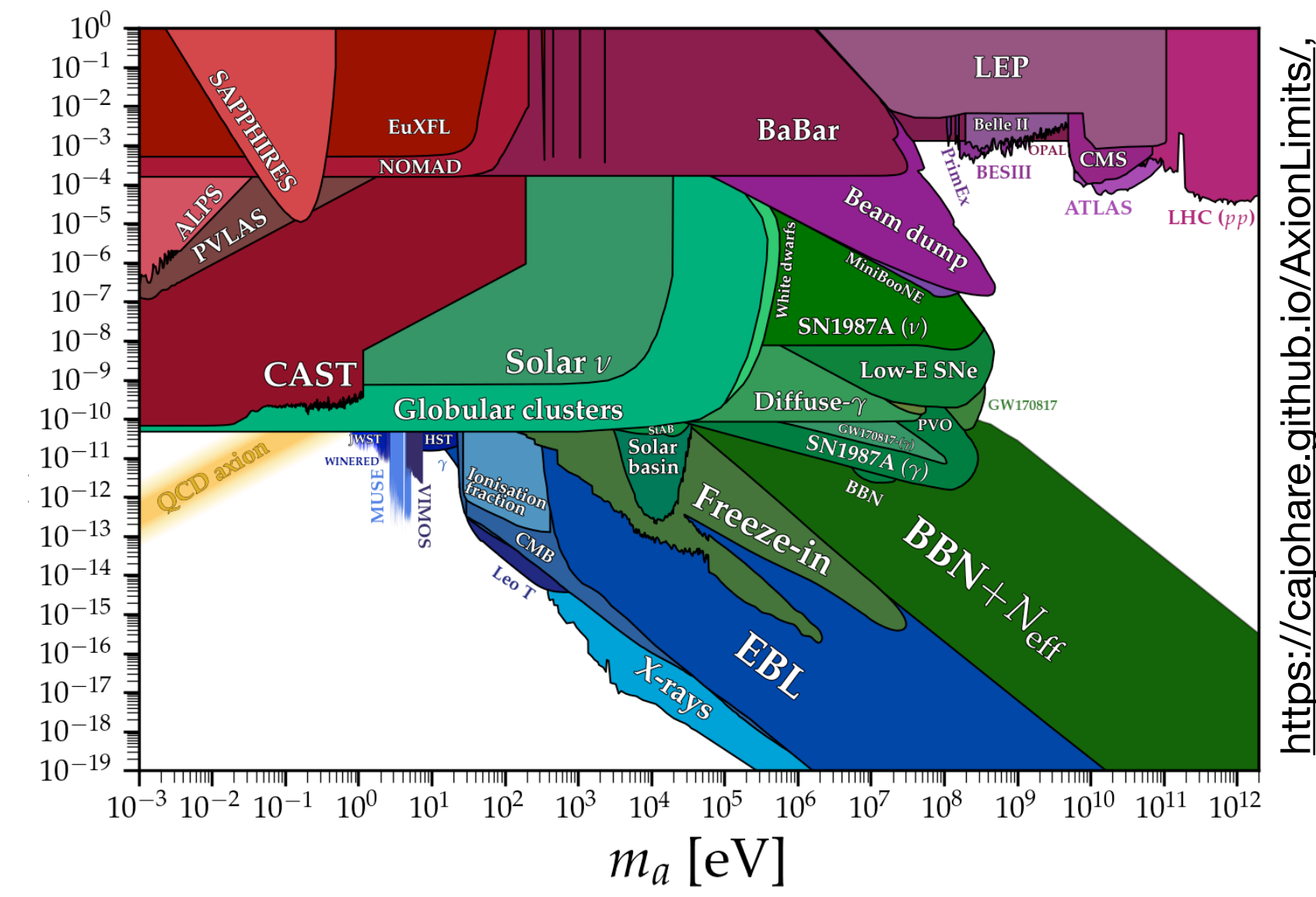
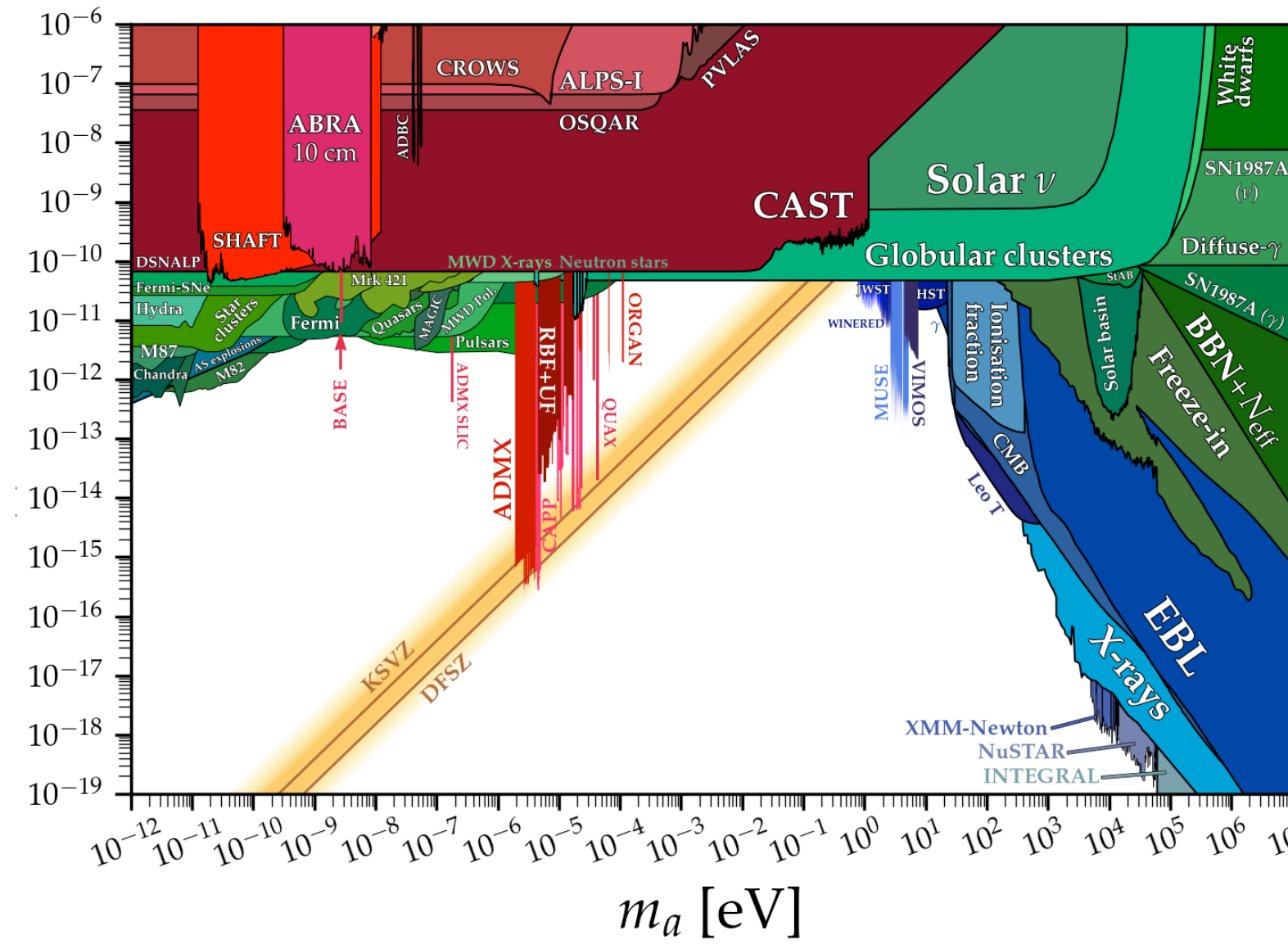
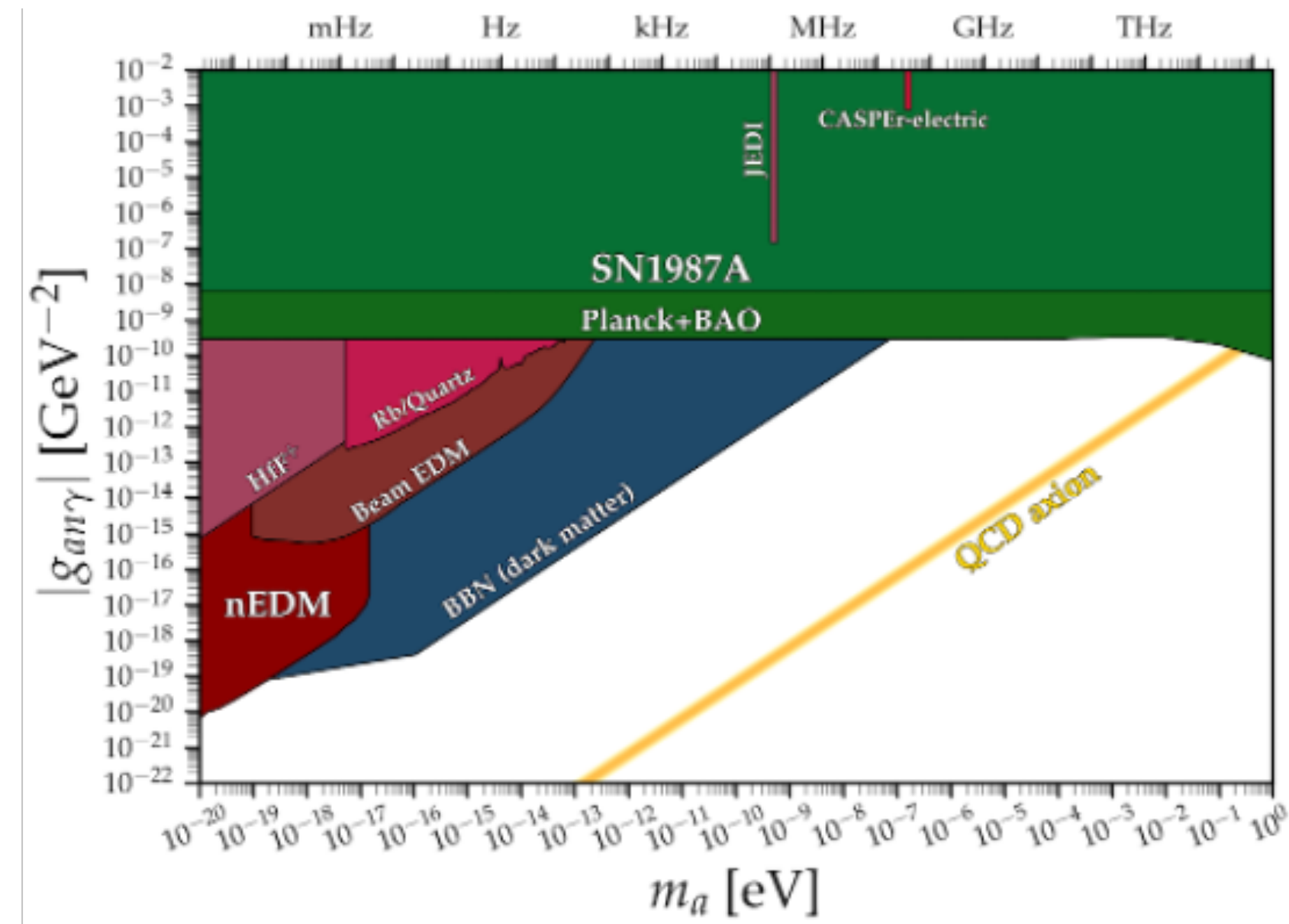
▶ Axion is an excellent candidate for the long-sought non baryonic Dark Matter.

→ **Keynote talk will be given by Yannis Semertzidis**

Fashion or discovery?



Physics from zeV to above TeV



<https://cajohare.github.io/AxionLimits/>

- ▶ A journey at the crossroads of particle physics, atomic physics, molecular physics, astrophysics and cosmology
- You will hear about: strong CP problem; haloscopes and antennas; helioscopes and underground detectors; light shining through wall; fifth force; axion-like particles; collider, fixed target and beam dump experiments; astrophysical and cosmological constraints; galactic and solar axions, etc.

Agenda

- ▶ **Start at 8:30 am** every day
- ▶ Lunches & Dinners generally at ICISE
 - Lunches around noon
 - Dinners at 6:30-7:30 pm
 - Two dinners in town: Tuesday and Wednesday evening
 - Conference dinner at ICISE on Thursday
- ▶ Beach break before dinner (but sunset already at 6:10 pm)
- ▶ Excursion on Wednesday afternoon
- ▶ Transversal talk on AI in subatomic physics on Thursday
- ▶ Last session on Friday evening
 - Departure from hotels on Saturday

Mon 05/08

08:00	Welcome address <i>ICISE, Quy Nhon, Vietnam</i>	<i>Isabelle Ripp-Baudot et al.</i> 08:30 - 09:00
09:00	Coffee break + conference group picture <i>ICISE, Quy Nhon, Vietnam</i>	09:30 - 10:00
10:00	Introductory review on Axion physics <i>ICISE, Quy Nhon, Vietnam</i>	<i>Yannis Semertzidis</i> 10:00 - 10:45
11:00	Search for the QCD Axion with ADMX <i>ICISE, Quy Nhon, Vietnam</i>	<i>Nick Du</i> 11:00 - 11:20
	MADMAX A Dielectric Haloscope Experiment <i>ICISE, Quy Nhon, Vietnam</i>	<i>Anton Ivanov</i> 11:25 - 11:45
12:00	IAXO - The next generation axion helioscope <i>ICISE, Quy Nhon, Vietnam</i>	<i>Christoph Wiesinger</i> 11:50 - 12:10
	Lunch at ICISE	
13:00	<i>ICISE, Quy Nhon, Vietnam</i>	12:15 - 13:30
	The CAPP-MAX axion haloscope: status and prospects <i>ICISE, Quy Nhon, Vietnam</i>	<i>Saebyeek Ahn</i> 13:30 - 13:50
14:00	The echo method for axion dark matter searches <i>ICISE, Quy Nhon, Vietnam</i>	<i>Ariel Arza</i> 13:55 - 14:25
	ALP searches at MEG II <i>ICISE, Quy Nhon, Vietnam</i>	<i>Toshinori Mori</i> 14:35 - 14:55
15:00	The COMET experiment at J-PARC and lepton flavor violating ALPs <i>ICISE, Quy Nhon, Vietnam</i>	<i>Thomas Bouillaud</i> 15:00 - 15:20
	Coffee break <i>ICISE, Quy Nhon, Vietnam</i>	15:25 - 15:55
16:00	Time-varying electric dipole moments, spin-precession effects and variations of fundamental constants induced by ultralight axion and scalar dark matter <i>ICISE, Quy Nhon, Vietnam</i>	<i>Yevgeny Stadnik</i>
17:00	Search for permanent and oscillating EDM of the neutron <i>ICISE, Quy Nhon, Vietnam</i>	<i>Gilles Ban et al.</i> 16:35 - 17:10
	Beach break	
18:00	<i>ICISE, Quy Nhon, Vietnam</i>	17:25 - 18:30
	Dinner at ICISE	
19:00	<i>ICISE, Quy Nhon, Vietnam</i>	18:30 - 19:30

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Tue 06/08

08:00	Atomic and Molecular searches for Oscillating Fundamental Constants <i>Dmitry Budker</i> ICISE, Quy Nhon, Vietnam	08:30 - 09:00
09:00	Experimental review of ALP searches at accelerators <i>David d'Enterria</i> ICISE, Quy Nhon, Vietnam	09:10 - 09:40
10:00	Discovery potential for ALPs on FASER and FASER 2. <i>Shunliang Zhang</i> ICISE, Quy Nhon, Vietnam	09:50 - 10:10
	Coffee break ICISE, Quy Nhon, Vietnam	10:15 - 10:45
11:00	Two-dimensional Core-collapse Supernova Models with Heavy Axion-like Particles <i>Kanji Mori</i> ICISE, Quy Nhon, Vietnam	10:45 - 11:15
	ALP searches with fixed target experiments <i>Stefania Gori</i> ICISE, Quy Nhon, Vietnam	11:25 - 11:55
12:00	Lunch at ICISE ICISE, Quy Nhon, Vietnam	12:05 - 13:30
13:00	Search for Axion-Like Dark Matter using Cold Neutrons <i>Ivo Schulthess</i> ICISE, Quy Nhon, Vietnam	13:30 - 13:50
14:00	ALP searches at LHCb <i>Louis Henry</i> ICISE, Quy Nhon, Vietnam	13:55 - 14:15
	Storage ring as an ALP antenna - an experimental proof of principle <i>Aleksandra Wronska</i> ICISE, Quy Nhon, Vietnam	14:20 - 14:40
	Searching dark matter with a 1000 km-baseline exotic-field interferometer <i>Daniel Gavilan Martin</i> ICISE, Quy Nhon, Vietnam	14:45 - 15:05
15:00	Coffee break ICISE, Quy Nhon, Vietnam	15:10 - 15:40
	ALP anarchy <i>Francesca Chadha-Day</i> ICISE, Quy Nhon, Vietnam	15:40 - 16:10
16:00	The ORGAN Experiment: Phase 1 results <i>Aaron Quiskamp</i> ICISE, Quy Nhon, Vietnam	16:20 - 16:40
17:00	The EDM inverse problem: exploring the BSM CP violations and the axion quality with electric dipole moments <i>Kiwoon Choi</i>	
18:00	Dinner in town (Vietnamese specialties) ICISE, Quy Nhon, Vietnam	18:30 - 20:30

Wed 07/08

08:00	High-temperature superconducting cavities for dark matter axion search at CAPP <i>Danho Ahn</i> ICISE, Quy Nhon, Vietnam	08:30 - 08:50
09:00	Cavity haloscopes for high-frequency axion search at IBS-CAPP <i>SungWoo Youn</i> ICISE, Quy Nhon, Vietnam	08:55 - 09:15
	Spontaneously Broken (-1) -Form $U(1)$ Symmetries <i>Motoo Suzuki</i> ICISE, Quy Nhon, Vietnam	09:20 - 09:50
10:00	Coffee break ICISE, Quy Nhon, Vietnam	10:00 - 10:30
	Recent Progress in ARIADNE <i>Yun Chang Shin</i> ICISE, Quy Nhon, Vietnam	10:30 - 10:50
11:00	Search for an interaction mediated by axion-like particles with ultracold neutrons at PSI <i>Pin-Jung Chiu</i> ICISE, Quy Nhon, Vietnam	10:55 - 11:15
	Exploring New Physics with the Optical Dump at LUXE <i>Ivo Schulthess</i> ICISE, Quy Nhon, Vietnam	11:20 - 11:40
	Interplay of ALP couplings at a future muon collider <i>Sudhakantha Girmohanta</i> ICISE, Quy Nhon, Vietnam	11:45 - 12:05
12:00	Lunch at ICISE ICISE, Quy Nhon, Vietnam	12:10 - 13:30
13:00	Excursion	
14:00		
15:00		
16:00		
17:00		
18:00	Dinner in town (Vietnamese specialties) ICISE, Quy Nhon, Vietnam	18:30 - 20:00

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Thu 08/08

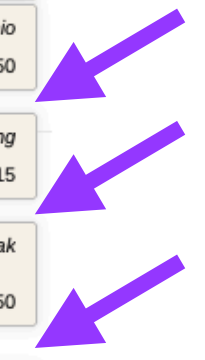
08:00	Axion Relic Pockets — A New Theory of Dark Matter ICISE, Quy Nhon, Vietnam	David Marsh 08:30 - 09:00
09:00	Contributions of CP violating interactions to the neutron EDM from lattice QCD ICISE, Quy Nhon, Vietnam	Rajan Gupta 09:10 - 09:40
10:00	Search for Solar Axions and ALP Dark Matter with XENONnT ICISE, Quy Nhon, Vietnam	Jingqiang Ye 09:50 - 10:10
	Coffee break ICISE, Quy Nhon, Vietnam	10:15 - 10:45
11:00	ALP searches at the High Energy Frontier ICISE, Quy Nhon, Vietnam	Jeremi Niedziela 10:45 - 11:15
	ALP searches at e+e- colliders ICISE, Quy Nhon, Vietnam	Marcello Campajola 11:25 - 11:55
12:00	Lunch at ICISE ICISE, Quy Nhon, Vietnam	12:05 - 13:30
13:00	Prospects for AI in subatomic physics ICISE, Quy Nhon, Vietnam	Dr Jean-Roch Vilmant 13:30 - 14:15
14:00	Search for the Dark Sector particles with molecules ICISE, Quy Nhon, Vietnam	Anna Zakharova 14:30 - 14:50
15:00	High Magnetic Fields to Probe the sub-eV range of Particle/Astroparticle Physics : From OSQAR experiments up to new... Pierre Pugat	
	Coffee break ICISE, Quy Nhon, Vietnam	15:20 - 15:50
16:00	The axion quality problem and possible solutions ICISE, Quy Nhon, Vietnam	Ryosuke Sato 15:50 - 16:20
	Lattice calculation of neutron electric dipole moment ICISE, Quy Nhon, Vietnam	Hiroshi Oki 16:30 - 17:00
17:00	Beach break ICISE, Quy Nhon, Vietnam	17:10 - 18:30
18:00	Conference banquet at ICISE ICISE, Quy Nhon, Vietnam	18:30 - 20:30
19:00		
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08:00	Searches for ALP production and decays at kaon factories ICISE, Quy Nhon, Vietnam	<i>Evgueni Goudzovski</i> 08:30 - 08:50
09:00	Search for Axion-like Particles in Photonic Final States with FASER ICISE, Quy Nhon, Vietnam	<i>Xin Chen</i> 08:55 - 09:15
	Exploring CP Violation beyond the Standard Model and the PQ Quality with Electric Dipole Moments ICISE, Quy Nhon, Vietnam	<i>Sang Hui Im</i> 09:20 - 09:50
10:00	Coffee break ICISE, Quy Nhon, Vietnam	10:00 - 10:30
	Belle II observation prospects for axion-like particle production from B meson annihilation decay ICISE, Quy Nhon, Vietnam	<i>Daniel Marcantonio</i> 10:30 - 10:50
11:00	Search for new physics using a 129Xe-131Xe-Rb comagnetometer ICISE, Quy Nhon, Vietnam	<i>Dong Sheng</i> 10:55 - 11:15
	Signatures of astrophobic QCD axion ICISE, Quy Nhon, Vietnam	<i>Marcin Badziak</i> 11:20 - 11:50
12:00	Lunch at ICISE ICISE, Quy Nhon, Vietnam	12:00 - 13:30
13:00	Small Instanton-induced Flavor Invariants and the Axion Potential ICISE, Quy Nhon, Vietnam	<i>Pham Ngoc Hoa Vuong</i> 13:30 - 13:50
14:00	State of the art RF electronics readout for axion dark matter experiments ICISE, Quy Nhon, Vietnam	<i>Boris Ivanov</i> 13:55 - 14:15
	Multiple QCD axions ICISE, Quy Nhon, Vietnam	<i>Pablo Quilez</i> 14:20 - 14:50
15:00	Coffee break ICISE, Quy Nhon, Vietnam	15:00 - 15:30
	How viable is a 10MeV QCD axion? ICISE, Quy Nhon, Vietnam	<i>Shota Nakagawa</i> 15:30 - 15:50
16:00	Theoretical conclusion ICISE, Quy Nhon, Vietnam	<i>Kiwoon Choi</i> 15:55 - 16:15
	Experimental conclusion ICISE, Quy Nhon, Vietnam	<i>SungWoo Youn</i> 16:20 - 16:40
	Farewell ICISE, Quy Nhon, Vietnam	<i>Guillaume Pignol</i> 16:45 - 17:00
17:00	Beach break ICISE, Quy Nhon, Vietnam	17:00 - 18:30
18:00	Dinner at ICISE ICISE, Quy Nhon, Vietnam	18:30 - 19:30
19:00		

Q&A session



We hope for rich discussion after each talk!

Everything You Always Wanted to Know About Axions*
(*But Were Afraid to Ask)



20 min-talk → 5 min of Q&A
30 min-talk → 10 min of Q&A
45 min-talk → 15 min of Q&A

Organisation committees

Scientific programme committee

Pierre **Brun**
Irfu/CEA and
Université Paris-Saclay
Saclay, France

Vincent **Desjacques**
Technion,
Haifa, Israel

Guillaume **Pignol**
IN2P3/LPSC,
Grenoble, France

Jérémie **Quevillon**
LAPTh,
Annecy, France

Diego **Redigolo**
INFN Florence, Italy

Isabelle **Ripp-Baudot** (Chair)
IN2P3/IPHC,
Strasbourg, France

Yannis **Semertzidis**
IBS-CAPP and KAIST,
Daejeon, South Korea

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All the staff from ICISE