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## Searching for better flu surveillance? A brief communication arising from Ginsberg et al. Nature 457, 1012-1014 (2009)

Donald Olson, Atar Baer ... Farzad Mostashari

Research | [Open Access](#) | 05 Aug 2009 | **Nature Precedings** | P: 1

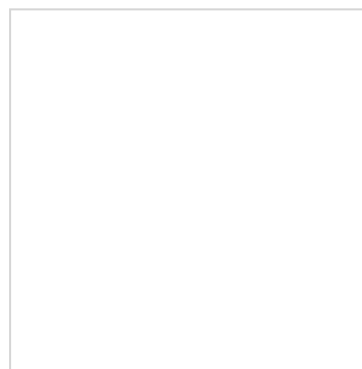
## Quantum sensing for gravity cartography

A study reports a quantum gravity gradient sensor with a design that

eliminates the need for long measurement times, and demonstrates the detection of an underground tunnel in an urban environment.

Ben Stray, Andrew Lamb ... Michael Holynski

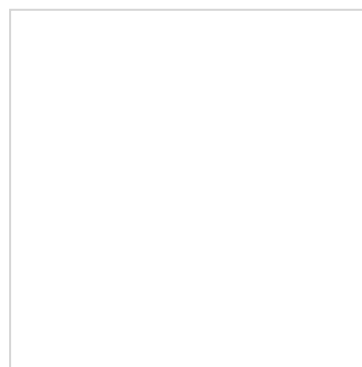
**Research** | [Open Access](#) | 23 Feb 2022 | **Nature** | Volume: 602, P: 590-594



## Quantum steering with vector vortex photon states with the detection loophole closed

Sergei Slussarenko, Dominick J. Joch ... Geoff J. Pryde

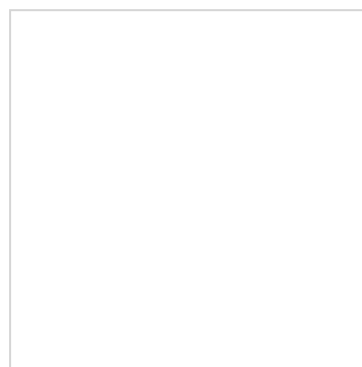
**Research** | [Open Access](#) | 02 Mar 2022 | **npj Quantum Information** | Volume: 8, P: 1-6



## Estimating the density of deep eutectic solvents applying supervised machine learning techniques

Mohammadjavad Abdollahzadeh, Marzieh Khosravi ... Farzad Tat Shahdost

**Research** | [Open Access](#) | 23 Mar 2022 | **Scientific Reports** | Volume: 12, P: 1-16

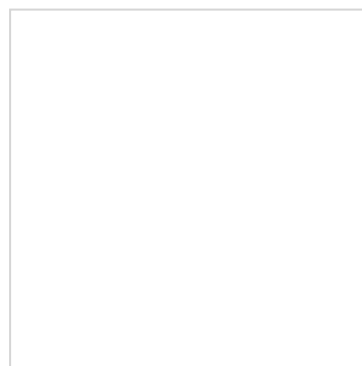


## Anemia prevalence in women of reproductive age in low- and middle-income countries between 2000 and 2018

Geospatial estimates of the prevalence of anemia in women of reproductive age across 82 low-income and middle-income countries reveals considerable heterogeneity and inequality at national and subnational levels, with few countries on track to meet the WHO Global Nutrition Targets by 2030.

Damaris Kinyoki, Aaron E. Osgood-Zimmerman ... Simon I. Hay

**Research** | [Open Access](#) | 12 Oct 2021 | **Nature Medicine** | Volume: 27, P: 1761-1782



## Acoustic non-Hermitian skin effect from twisted winding topology

Non-Hermitian skin effect fundamentally challenges the conventional topological description of a system. Here the authors demonstrate a bipolar non-Hermitian skin effect, where bulk eigenstates localize towards two directions, in a one-dimensional non-reciprocal acoustic crystal with twisted topology.

Li Zhang, Yihao Yang ... Baile Zhang

**Research** | [Open Access](#) | 02 Nov 2021 | **Nature Communications** | Volume: 12, P: 1-7

## **Cryo-EM snapshots of a native lysate provide structural insights into a metabolon-embedded transacetylase reaction**

How is acetyl-CoA produced in the context of the endogenous, eukaryotic pyruvate dehydrogenase complex metabolon? Here the authors dissect the embedded transacetylase reaction through biochemical, cryo-EM, HADDOCKing and molecular dynamics methods.

Christian Tüting, Fotis L. Kyrilis ... Panagiotis L. Kastiris

**Research** | [Open Access](#) | 26 Nov 2021 | **Nature Communications** | Volume: 12, P: 1-13

## **The driver landscape of sporadic chordoma**

Chordoma is a rare often incurable malignant bone tumour. Here, the authors investigate driver mutations of sporadic chordoma in 104 cases, revealing duplications in notochordal transcription factor brachyury (*T*), PI3K signalling mutations, and mutations in *LYST*, a potential novel cancer gene in chordoma.

Patrick S. Tarpey, Sam Behjati ... Peter J. Campbell

**Research** | [Open Access](#) | 12 Oct 2017 | **Nature Communications** | Volume: 8, P: 1-6

## **Soil-based nano-graphene oxide and foliar selenium and nano-Fe influence physiological responses of 'Sultana' grape under salinity**

Mohammad Ali Aazami, Lamia Vojodi Mehrabani ... Farzad Rasouli

**Research** | [Open Access](#) | 10 Mar 2022 | **Scientific Reports** | Volume: 12, P: 1-13

## **Rise of the second order**

Giulia Pacchioni

**Research Highlights** | 23 Aug 2019 | **Nature Reviews Materials** | Volume: 4, P: 572

## Tracheal aspirate RNA sequencing identifies distinct immunological features of COVID-19 ARDS

Here, the authors perform transcriptional profiling on tracheal aspirates of adults requiring mechanical ventilation for SARS-CoV2-induced acute respiratory distress syndrome (ARDS) and identify a dysregulated host response predicted to be potentially modulated by dexamethasone.

Aartik Sarma, Stephanie A. Christenson ... Charles R. Langelier

**Research** | [Open Access](#) | 26 Aug 2021 | **Nature Communications** | Volume: 12, P: 1-10

## Mapping the human genetic architecture of COVID-19

A global network of researchers was formed to investigate the role of human genetics in SARS-CoV-2 infection and COVID-19 severity; this paper reports 13 genome-wide significant loci and potentially actionable mechanisms in response to infection.

Mari E. K. Niemi, Juha Karjalainen ... Chloe Donohue

**Research** | [Open Access](#) | 08 Jul 2021 | **Nature** | Volume: 600, P: 472-477

## Mapping local patterns of childhood overweight and wasting in low- and middle-income countries between 2000 and 2017

Fine-scale geospatial mapping of overweight and wasting (two components of the double burden of malnutrition) in 105 LMICs shows that overweight has increased from 5.2% in 2000 to 6.0% in children under 5 in 2017. Although overall wasting decreased over the same period, most countries are not on track to meet the World Health Organization's Global Nutrition Target of <5% in over half of LMICs by 2025.

Damaris K. Kinyoki, Jennifer M. Ross ... Simon I. Hay

**Research** | [Open Access](#) | 20 Apr 2020 | **Nature Medicine** | Volume: 26, P: 750-759

## The increasing global environmental consequences of a weakening US–China crop trade relationship

The potential environmental consequences driven by US–China crop trade tension are considerable and could spill over to other countries, especially Brazil and other South American countries, through international trade. Such consequences are predominantly driven by China’s proposed retaliation on US soybeans.

Guolin Yao, Xin Zhang ... Farzad Taheripour

**Research** | 12 Aug 2021 | **Nature Food** | Volume: 2, P: 578-586

## En route to dynamic life processes by SNARE-mediated fusion of polymer and hybrid membranes

A variety of artificial cells springs from the functionalization of liposomes with proteins but these models suffer from low durability without repair and replenishment mechanisms. Here, the authors show that synthetic amphiphile membranes undergo SNARE-mediated fusion, and determine bending rigidity and pore edge tension as key parameters for fusion.

Lado Otrin, Agata Witkowska ... Tanja Vidaković-Koch

**Research** | [Open Access](#) | 17 Aug 2021 | **Nature Communications** | Volume: 12, P: 1-12

## Contribution of obesity and cardiometabolic risk factors in developing cardiovascular disease: a population-based cohort study

Mahmood Bakhtiyari, Elham Kazemian ... Freidoun Azizi

**Research** | [Open Access](#) | 28 Jan 2022 | **Scientific Reports** | Volume: 12, P: 1-10

## Mapping routine measles vaccination in low- and middle-income countries

Although progress in the coverage of routine measles vaccination in children in low- and middle-income countries was made during 2000–2019, many countries remain far from the goal of 80% coverage in all districts by 2019.

Alyssa N. Sbarra, Sam Rolfe ... Jonathan F. Mosser

**Research** | [Open Access](#) | 16 Dec 2020 | **Nature** | Volume: 589, P: 415-419

## Successful vaccination with a polyvalent live vector despite existing

## immunity to an expressed antigen

Charles Flexner, Brian R. Murphy ... Bernard Moss

**Research** | 15 Sept 1988 | **Nature** | Volume: 335, P: 259-262

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## Antibody to Thy-1 antigen injected into rat hypothalamus selectively inhibits carbamyl choline induced drinking

Curtis A. Williams, James Barna & Nicole Schupf

**Research** | 03 Jan 1980 | **Nature** | Volume: 283, P: 82-84

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## Prostaglandin synthesis in different phases of phagocytosis in lung macrophages

Wei Hsueh, F. Gonzalez-Crussi & Eric Hanneman

**Research** | 03 Jan 1980 | **Nature** | Volume: 283, P: 80-82

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## Increased atrial arrhythmia susceptibility induced by intense endurance exercise in mice requires TNF $\alpha$

Endurance exercise is associated with an increased risk of atrial fibrillation. Here, the authors show the adipokine TNF $\alpha$  is a crucial mediator of exercise-induced atrial fibrillation and irreversible atrial remodelling characterized by fibrosis and inflammation.

Roozbeh Aschar-Sobbi, Farzad Izaddoustdar ... Peter H. Backx

**Research** | 19 Jan 2015 | **Nature Communications** | Volume: 6, P: 1-14

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## Interfering trajectories in experimental quantum-enhanced stochastic simulation

Quantum devices should allow simulating stochastic processes using less memory than classical counterparts, but only if quantum coherence is maintained through multiple steps. Here, the authors demonstrate a coherence-preserving three-step stochastic simulation using photons.

Farzad Ghafari, Nora Tischler ... Geoff J. Pryde

**Research** | **Open Access** | 09 Apr 2019 | **Nature Communications** | Volume: 10, P: 1-8

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## Repositioning of the global epicentre of non-optimal cholesterol

From 1980 to 2018, the levels of total and non-high-density lipoprotein cholesterol increased in low- and middle-income countries, especially in east and southeast Asia, and decreased in high-income western countries, especially those in northwestern Europe, and in central and eastern Europe.

Cristina Taddei, Bin Zhou ... Majid Ezzati

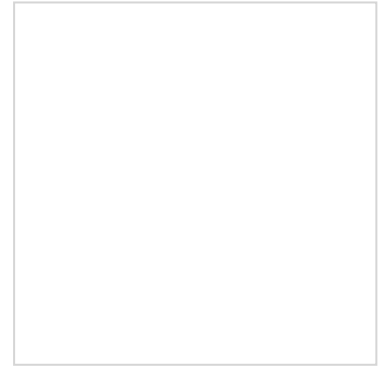
## Non-Hermitian topological whispering gallery

An acoustic topological gallery insulator constructed from sonic crystals made of thermoplastic rods decorated with carbon nanotube films enables the out-coupling of amplified and focused sound at audible frequencies.

Bolun Hu, Zhiwang Zhang ... Johan Christensen

**Research** | [Open Access](#) | 29 Sept 2021 | **Nature** | Volume: 597, P: 655-659

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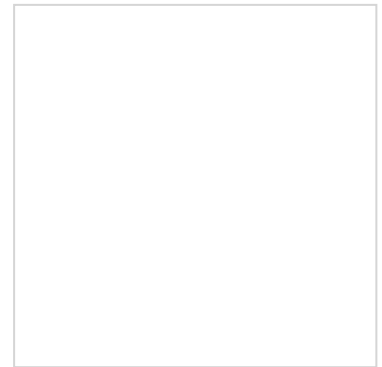
## Programmable polymorphism of a virus-like particle

Virus-like particles are promising for drug delivery systems and vaccine development, but controlling their size and morphology is challenging. Here, amino acid sequences are inserted into MS2 bacteriophage virus-like particles, with their size and shape being controlled by varying the insert used.

Artur P. Biela, Antonina Naskalska ... Jonathan G. Heddle

**Research** | [Open Access](#) | 07 Feb 2022 | **Communications Materials** | Volume: 3, P: 1-9

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## Transfer of a functional human immune system to mice with severe combined immunodeficiency

Donald E. Mosier, Richard J. Gulizia ... Darcy B. Wilson

**Research** | 15 Sept 1988 | **Nature** | Volume: 335, P: 256-259

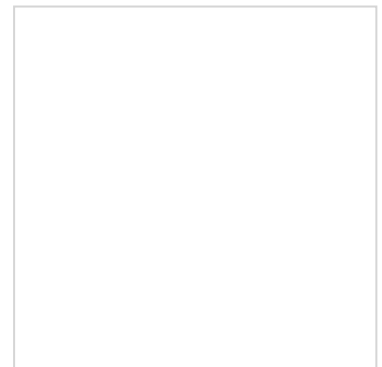
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## Association between the *CYP1A1 MspI* polymorphism and risk of head and neck cancer: a meta-analysis

Hady Mohammadi, Mehrnoush Momeni Roochi ... Masoud Sadeghi

**Research** | [Open Access](#) | 27 Jan 2022 | **Scientific Reports** | Volume: 12, P: 1-18

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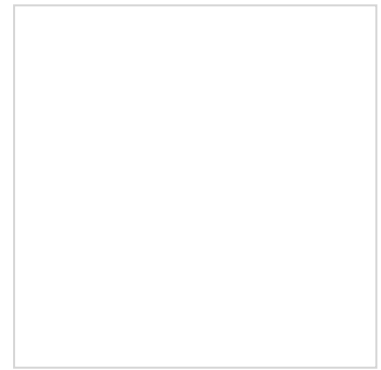
## Genetic mechanisms of critical illness in COVID-19

A genome-wide association study of critically ill patients with COVID-19 identifies genetic signals that relate to important host antiviral defence

mechanisms and mediators of inflammatory organ damage that may be targeted by repurposing drug treatments.

Erola Pairo-Castineira, Sara Clohisey ... J. Kenneth Baillie

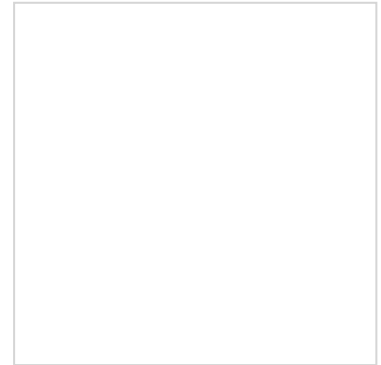
**Research** | 11 Dec 2020 | **Nature** | Volume: 591, P: 92-98



## **Vaccination of mice with hybrid protein containing Exotoxin S and PcrV with adjuvants alum and MPL protects *Pseudomonas aeruginosa* infections**

Mohammad Reza Asadi Karam, Farzad Badmasti ... Mehri Habibi

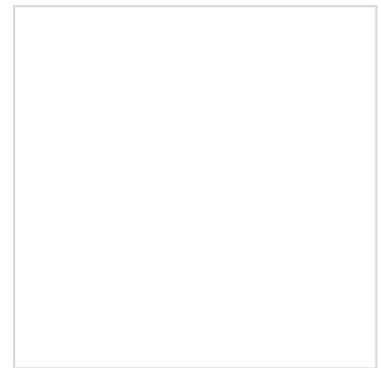
**Research** | [Open Access](#) | 25 Jan 2022 | **Scientific Reports** | Volume: 12, P: 1-9



## **An age-structured model of hepatitis B viral infection highlights the potential of different therapeutic strategies**

Farzad Fatehi, Richard J. Bingham ... Reidun Twarock

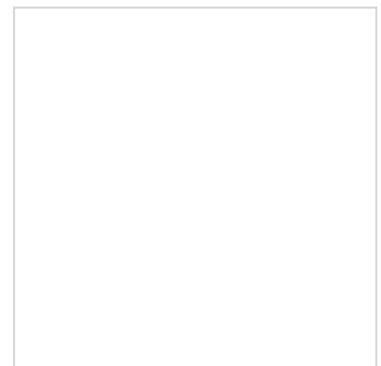
**Research** | [Open Access](#) | 24 Jan 2022 | **Scientific Reports** | Volume: 12, P: 1-12



## **Therapeutic interfering particles exploiting viral replication and assembly mechanisms show promising performance: a modelling study**

Farzad Fatehi, Richard J. Bingham ... Reidun Twarock

**Research** | [Open Access](#) | 13 Dec 2021 | **Scientific Reports** | Volume: 11, P: 1-10



## **Thank you to all of our reviewers in 2021**

5514 individual reviewers contributed to the peer review process at *Communications Biology* in 2021. We acknowledge and thank each of them here.



## **Synthesis of tetrazolo[1,5-a]pyrimidine-6-carbonitriles using HMTA-BAIL@MIL-101(Cr) as a superior heterogeneous catalyst**

Mohammad Hossein Abdollahi-Basir, Boshra Mirhosseini-Eshkevari ...  
Mohammad Ali Ghasemzadeh

**Research** | [Open Access](#) | 03 Mar 2021 | **Scientific Reports** | Volume: 11, P: 1-12

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## **A strong no-go theorem on the Wigner's friend paradox**

For a scenario of two separated but entangled observers, inequalities are derived from three fundamental assumptions. An experiment shows that these inequalities can be violated if quantum evolution is controllable on the scale of an observer.

Kok-Wei Bong, Aníbal Utreras-Alarcón ... Howard M. Wiseman

**Research** | 17 Aug 2020 | **Nature Physics** | Volume: 16, P: 1199-1205

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## **Application of Latent Class Analysis to Identify Metabolic Syndrome Components Patterns in adults: Tehran Lipid and Glucose study**

Noushin Sadat Ahanchi, Farzad Hadaegh ... Davood Khalili

**Research** | [Open Access](#) | 07 Feb 2019 | **Scientific Reports** | Volume: 9, P: 1-8

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## **A universal methodology for reliable predicting the non-steroidal anti-inflammatory drug solubility in supercritical carbon dioxide**

Tahereh Rezaei, Vesal Nazarpour ... Farzad Tat Shahdost

**Research** | [Open Access](#) | 20 Jan 2022 | **Scientific Reports** | Volume: 12, P: 1-12

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## **Assay of honey freshness by a novel optical technique**

Alireza Mashhadi, Ali Bavali & Farzad Mokhtari

**Research** | [Open Access](#) | 18 Jan 2022 | **Scientific Reports** | Volume: 12, P: 1-14

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## Effects of constructal theory on thermal management of a power electronic system

Amin Asadi & Farzad Pourfattah

**Research** | [Open Access](#) | 08 Dec 2020 | **Scientific Reports** | Volume: 10, P: 1-14

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## Positive and negative chemotaxis of enzyme-coated liposome motors

Enzyme-coated liposomal motors show either positive or negative chemotaxis depending on the interplay between enzyme catalysis and solute–phospholipid interactions.

Ambika Somasundar, Subhadip Ghosh ... Ayusman Sen

**Research** | 18 Nov 2019 | **Nature Nanotechnology** | Volume: 14, P: 1129-1134

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## How soap bubbles freeze

While the physics of freezing water droplets are known, it is less known how bubbles freeze. The authors investigate the physics of freezing soap bubbles and identify two distinct freezing modes, depending on whether the surroundings are warmer or colder than the melting temperature.

S. Farzad Ahmadi, Saurabh Nath ... Jonathan B. Boreyko

**Research** | [Open Access](#) | 18 Jun 2019 | **Nature Communications** | Volume: 10, P: 1-10

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## Topological analog signal processing

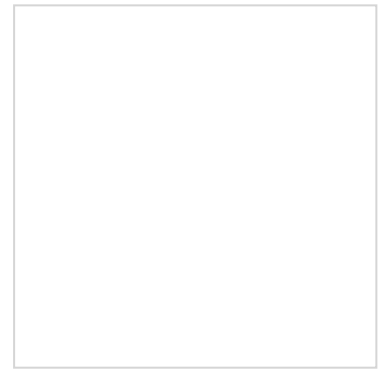
Analog signal processors could potentially offer faster operation and lower power consumption than digital versions, but are not yet

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commonly used for large scale applications due to considerable observational errors. Here, the authors demonstrate the unique relevance of topological insulators for improving reliability in such analog processors.

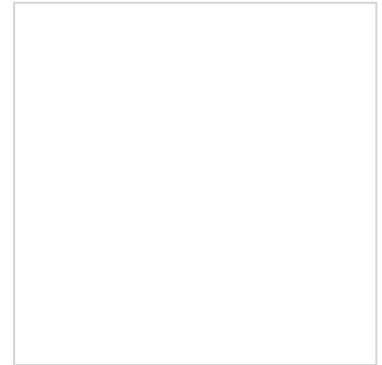
Farzad Zangeneh-Nejad & Romain Fleury

**Research** | [Open Access](#) | 03 May 2019 | **Nature Communications** | Volume: 10, P: 1-10



## People

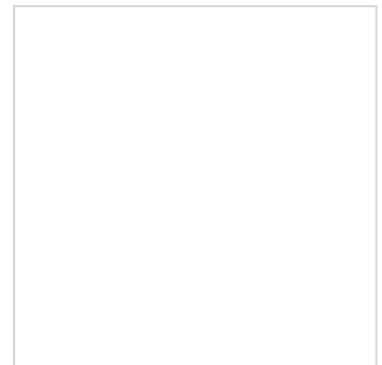
**Comments & Opinion** | 07 Jun 2011 | **Nature Biotechnology** | Volume: 29, P: 550



## Retinal Oxygen Delivery, Metabolism, and Extraction Fraction during Long-Term Bilateral Common Carotid Artery Occlusion in Rats

Sophie Leahy, Shayan Farzad ... Mahnaz Shahidi

**Research** | [Open Access](#) | 25 Jun 2020 | **Scientific Reports** | Volume: 10, P: 1-8

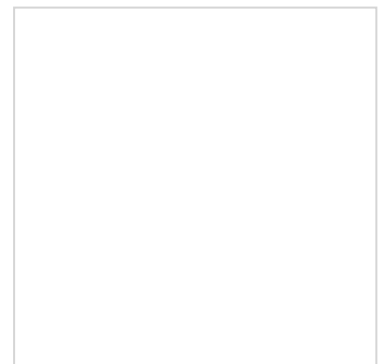


## Electric-field control of spin accumulation direction for spin-orbit torques

Voltage control of spin-orbit torques (SOTs) provides additional degrees of freedom for spinmemory and -logic applications. Here the authors demonstrate a large voltage control of direction as well as amount of current-induced spin accumulation at the heavy metal/ferromagnet interface and effectively tune the SOTs in a Pt/Co/GdOx heterostructure.

Rahul Mishra, Farzad Mahfouzi ... Hyunsoo Yang

**Research** | [Open Access](#) | 16 Jan 2019 | **Nature Communications** | Volume: 10, P: 1-8



## Topological optical differentiator

Spatial differentiation is a form of optical computation which has applications in image processing. Here, the authors exploit nontrivial

