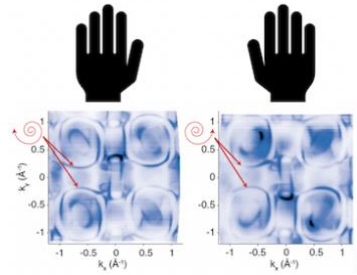


Observation and control of maximal Chern numbers in a chiral topological semimetal



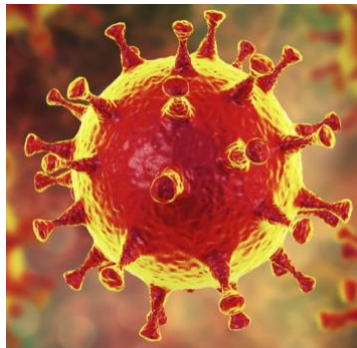
In topological materials, electrons can display behaviour that is fundamentally different from that in ‘conventional’ matter. The magnitude of many such ‘exotic’ effects is directly proportional to an entity known as the Chern number. Experiments at the ADDRESS beamline of SLS and at the Diamond Light Source (UK) establish now for the first time that the theoretically predicted maximum Chern number can be reached in a real material. The researchers set this benchmark studying the topological semimetal palladium gallium, in which they observed Chern numbers of magnitude 4 - the maximum value allowed in any

metallic crystal. Moreover, they found ways to control the sign of the Chern number, which might bring new opportunities for exploring, and exploiting, topological phenomena.

Read more: <https://www.psi.ch/en/psd/scientific-highlights/cherned-up-to-the-maximum>

N.B.M. Schröter et al., *Science* 369, 179 (2020), DOI: [10.1126/science.aaz3480](https://doi.org/10.1126/science.aaz3480)

Impact of COVID



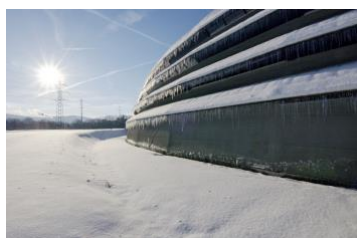
We are happy to welcome you back for **SLS** and **SwissFEL** user operation. Safety measures remain in place and we kindly ask for your cooperation in reducing the team size on site as much as possible without jeopardizing the success of the experimental campaigns. Please use a combination of local and remote access or 100% remote wherever possible (e.g. MX).

As you know, the situation is moving fast and is hardly predictable. We will try to keep you informed. Please visit the User Office Homepage (<https://www.psi.ch/en/useroffice>) for the latest updates.

Read more:

- Priority access call for work on combating COVID-19 extended until December 31: <https://www.psi.ch/en/sls/scientific-highlights/priority-access-call-for-work-on-combating-covid-19>
- PSI information flyer: user operation during the COVID-19 period: https://www.psi.ch/sites/default/files/2020-06/Flyer_User_operation_e_0.pdf
- Information about travel restrictions and quarantine regulations in Switzerland: <https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/empfehlungen-fuer-reisende.html>
- COVID-19 related research at PSI: <https://www.psi.ch/en/psd/research-areas>

Happy New Year



The PSI Photon Science Team wishes you, your friends and family a safe, healthy, and prosperous new year!