

Théorie conforme des champs et systèmes quantiques à plusieurs corps  
21 août – 9 septembre 2022

Conformal field theory and quantum many-body physics  
August 21 – September 9, 2022

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## **Phonons behave like electrons in the thermal Hall effect of the Cuprates**

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The thermal Hall effect describes heat flow transverse to the thermal gradient in a magnetic field. Various high-temperature cuprate superconductors are recently found to have a large thermal Hall conductivity which is attributed to chiral phonons, although the underlying mechanism for this chirality is still a mystery. In our work, we uncover a striking linear temperature dependence for the inverse thermal Hall resistivity in numerous cuprates from all parts of the phase diagram: Mott insulator, pseudogap, and field-suppressed superconductor. Interestingly, this linear inverse thermal Hall resistivity is found in the Drude model for itinerant electrons. This shows that chiral phonons behave like electrons in the thermal Hall effect of numerous cuprates. This simple but surprising relation puts a more stringent constraint on theoretical models and also motivates further experimental work in understanding the universality of this linear inverse thermal Hall resistivity.