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**The strong side of weak topological insulators** YAA-  
COV KRAUS, ZOHAR RINGEL, ADY STERN, Weizmann Institute  
of Science — Three-dimensional topological insulators are classified into  
“strong” (STI) and “weak” (WTI) according to the nature of their sur-  
face states. While the surface states of the STI are topologically pro-  
tected, in the WTI they are believed to be very fragile to disorder. In this  
work we show that the WTI surface states are actually protected from  
any random perturbation which does not break time-reversal symmetry,  
and does not close the bulk energy gap. Consequently, the conductivity  
of metallic surfaces in the clean system will remain finite even in the  
presence of strong disorder of this type. In the weak disorder limit the  
surfaces are perfect metals, and strong surface disorder only acts to push  
them inwards. We find that WTI’s differ from STI’s primarily in their  
anisotropy, and that the anisotropy is not a sign of their weakness but  
rather of their richness.

Yaacov Kraus  
Weizmann Institute of Science

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