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Shearconductivity as evidence for broken mirror symmetries PATRIK HLOBIL, Karlsruhe Institute of Technology, Stanford University, SRINIVAS RAGHU, AKASH MAHARAJ, PAVAN HOSUR, Stanford University — We propose the possible detection of broken mirror symmetries in highly correlated two-dimensional materials by elastotransport measurements. Using linear response theory we calculate the shearconductance $\Gamma_{xx,xy} = \partial\sigma_{xx}/\partial\epsilon_{xy}$, the linear change of the longitudinal conductivity σ_{xx} due to a shear strain ϵ_{xy}. This quantity can only be non-vanishing if the in-plane mirror symmetries are broken and we show that a square lattice with checkerboard charge and bond density wave shows a finite shearconductivity. This implies that a measurement of $\Gamma_{xx,xy}$ opens the possibility to verify broken mirror symmetry in the pseudogap regime of high-T_c superconductors. Experimental setups to detect shearconductance are presented.

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