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Current-induced self-organisation of mixed superconducting states

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Small-angle neutron scattering is used in combination with transport measurements to study the current-induced effects on the morphology of the intermediate mixed state in the intertype superconductor niobium. We report the robust self-organisation of the vortex lattice domains to elongated parallel stripes perpendicular to the applied current in a steady-state. Our experimental results are supported by theoretical calculations, which highlight important details of the vortex matter evolution.

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