Tunable spin-density-wave order in nickelate heterostructures\textsuperscript{1} A.
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Max Planck Institute for Solid State Research — Antiferromagnetic spin-density-
wave (SDW) order in metals has been proposed as the basis for a new generation
of spintronic devices. However, SDWs have been observed only in a few materials
to-date, and it has proven difficult to systematically control their properties. Using
resonant x-ray diffraction, we demonstrate SDW order in epitaxial thin films and
superlattices based on metallic $R$NiO$_3$ with $R$ = La, Nd, Pr. The materials re-
main highly conductive in the SDW state, and the amplitude of concomitant charge
order is dramatically reduced with respect to their bulk analogs. We also show
that the SDW polarization is tunable through two independent control parameters
— epitaxial strain and dimensional confinement of the conduction electrons. Nicke-
late heterostructures are thus a powerful new model platform for SDW physics and
antiferromagnetic spintronics.

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