Title:	Unconventional Superconductivity at LaVO3/SrTiO3 Interfaces
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Abstract:	The conducting interfaces of perovskite oxides are fertile playgrounds of diverse quantum phenomena, and they are potentially important for applications in superconducting nanoelectronic devices. We discovered that the interfaces between the Mott-insulator LaVO3 and the band-insulator SrTiO3 host two-dimensional superconductivity below Tc ≈ 250 mK. Our band structure calculations indicate that for these interfaces, multiple bands (the V and the Ti d bands) cross the Fermi energy where the V d electrons also carry a magnetic moment, thereby raising the possibility of an unconventional order parameter (OP) of the superconducting phase. We have fabricated subsurface soft metallic point-contacts at the LaVO3/SrTiO3 interfaces to probe the OP symmetry spectroscopically through the measurement of Andreev reflection. The spectroscopic features strongly deviate from the expectations within the conventional Bardeen–Cooper–Schriefer framework and support the existence of an unconventional order parameter.
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