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**Superconductivity in Electric Double Layer Capacitor under Pressure** DUNCAN MCCANN, MARTIN MISEK, KONSTANTIN KAMENEV, ANDREW HUXLEY, Centre for Science at Extreme Conditions, The University of Edinburgh — Chemical doping generally provides the most common method for tuning into the superconducting state of a material yet can be difficult to control and also potentially introduces structural disorder complicating the underlying physics. Electric Double Layer devices however provide a means to electrostatically dope materials with high electric fields allowing continuous tuning of a 2D superconducting state thus avoiding such issues. One such device is the Electric Double Layer Capacitor which can detect the onset of superconductivity through AC magnetisation measurements. We make use of a similar device in an attempt to electrostatically dope and tune the superconductivity in the cuprate compound  $\text{La}_{1.93}\text{Sr}_{0.07}\text{CuO}_4$  as well as investigating whether application of pressure improves its efficiency.

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