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Tunneling spectroscopy of e-doped cuprates LEI SHAN, YAN HUANG, YONG-LEI WANG, National Laboratory for Superconductivity,IOP,CAS, SHI-LIANG LI, JUN ZHAO, PENG-CHENG DAI, University of Tennessee and Oak Ridge National Laboratory, TN, HAI-HU WEN, National Laboratory for Superconductivity,IOP,CAS, NATIONAL LABORATORY FOR SUPERCONDUCTIVITY,IOP,CAS TEAM, UNIVERSITY OF TENNESSEE AND OAK RIDGE NATIONAL LABORATORY, TN COLLABORATION — Point-contact tunneling spectra were measured on electron-doped high-T_c cuprates (NCCO and PLCCO). By phenomenological analysis, we found that the superconducting gap (Δ_{sc}) definitely decreases towards zero in an almost universal law with continuously increasing temperature or magnetic field. At the fields above H_{c2}, a clear "pseudogap" was opened indicated by the obvious spectral losing below a characteristic energy scale (Δ_{pg}) which is much larger than Δ_{sc}. All the phenomena observed here seem to be crucial to distinguish the mechanism of HTSC and need to be extensively studied on more doping levels.

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