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Proximity induced superconductivity and multiple Andreev reflections in Graphene ALEXANDROS SHAILOS, WILLY NATIVEL, ALIK KASUMOV, CHRISTIAN COLLET, MEYDI FERRIER, SOPHIE GUÉRON, RICHARD DEBLOCK, HÉLÈNE BOUCHIAT, LPS MESOSCOPIC TEAM, THALES TEAM — We have investigated electronic transport of a graphene layer connected to superconducting electrodes. The device is prepared by mechanical exfoliation of graphite. A small mesa of graphene is placed on top of a silicon substrate covered by Alumina and 2 electrodes of tungstene separated by 2.5 microns are grown using a focus ion beam. Whereas tungstene electrodes are superconducting below 4K, proximity induced superconductivity in graphene is observed below 1K with a large differential resistance drop at low bias voltage. Signatures of multiple Andreev reflections are observed as peaks located at voltages corresponding to sub-multiple values of $2\Delta/e$ where Δ is the superconducting gap of the electrodes.

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