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Metal-insulator transitions in graphene MARIO AMADO, Universidad Complutense de Madrid, Spain, ENRIQUE DIEZ, Universidad de Salamanca, Spain, FRANCESCO ROSSELLA, VITTORIO BELLANI, Universita degli Studi de Pavia, Italy, DAVID LOPEZ-ROMERO, CT-ISOM Universidad Poletcnica de Madrid, Spain, DUNCAN MAUDE, Laboratoire national des champs magnetiques intenses, Grenoble, France — We investigate the metal-insulator quantum phase transitions that appear in the quantum Hall effect, namely the plateau-insulator and plateau-plateau transitions We have performed magnetotransport experiments with the magnetic field as the driving parameter in the temperature range from 4K up to 230K and magnetic fields up to 28T. The analysis of the temperature dependence of the Hall and longitudinal resistivity reveals the non-universality of the critical exponent for the metal-insulator transition when varying the density of carriers. We also find relevant discrepancies with recent works concerning the value of the critical exponent of the plateau-plateau transition.

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