Abstract Submitted
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**Spin and charge transport through 1D Moire Crystals**[1] CLEMENT BARRAUD[2], ROMEO BONNET[3], PASCAL MARTIN[4], MARIA LUISA DELLA ROCCA[5], PHILIPPE LAFARGE[6], Universite Paris Diderot, LABORATOIRE MATRIAUX ET PHNOMNES QUANTIQUES TEAM, LABORATOIRE ITODYS TEAM — Multiwall carbon nanotubes are good candidates for propagating spin information over large distances due to the large mobility of the carriers and to the weak spin-orbit coupling and hyperfine interactions. In this talk, I will present an experimental study concerning charge and spin transport through large diameter multiwall carbon nanotubes presenting intershell interactions leading to superlattice effects (1D Moire). After a description of 1D Moire crystals and to the implication of such superlattices in quantum transport, I will show that spin transport seems to be very efficient close to the new van Hove singularities. Clear magnetoresistance signals of the order of 40 % are reported at low temperatures.

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