Long-Range Superharmonic Josephson Current LUKA TRI-
FUNOVIC, University of Basel — We consider a long superconductor-ferromagnet-
superconductor junction with one spin-active region. It is shown that an *odd* num-
ber of Cooper pairs cannot have a long-range propagation when there is *only one*
spin-active region. When temperature is much lower than the Thouless energy, the
coherent transport of *two* Cooper pairs becomes dominant process and the *super-
harmonic* current-phase relation is obtained ($I \propto \sin 2\phi$).

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