

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**Long-Range Superharmonic Josephson Current** LUKA TRIFUNOVIC, University of Basel — We consider a long superconductor-ferromagnet-superconductor junction with one spin-active region. It is shown that an *odd* number 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 *superharmonic* current-phase relation is obtained ( $I \propto \sin 2\phi$ ).

Luka Trifunovic  
University of Basel

Date submitted: 29 Nov 2011

Electronic form version 1.4