SEMINARIUM Z MAGNETYZMU I NADPRZEWODNICTWA

Uprzejmie zawiadamiamy, że w **środę**

16 grudnia 2020 r., o godz.10:00

odbędzie się seminarium **on-line (link podany jest na stronie IF PAN)**,

na którym

dr Kaveh Lahabi

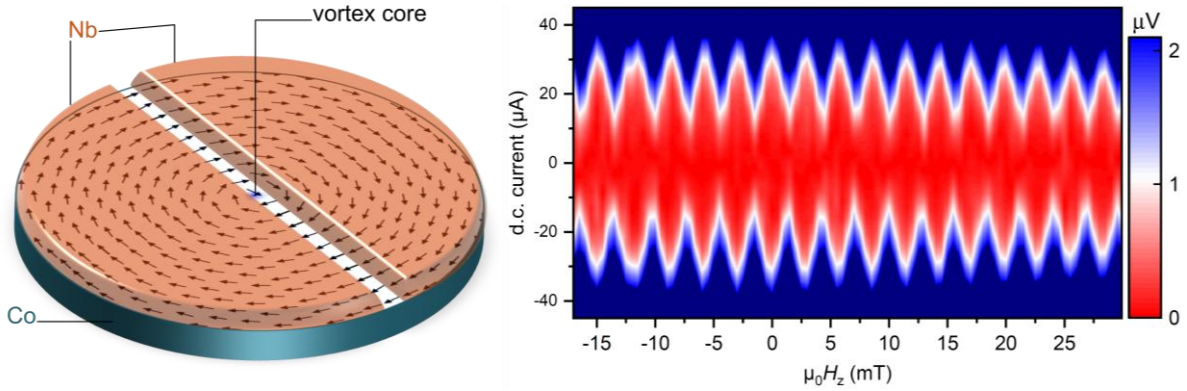
Kamerlingh Onnes Laboratory, Leiden University, 2300 RA Leiden, the Netherlands

wygłosi referat na temat:

"Generating Long-Range Spin-Triplet Supercurrents with a Single Ferromagnet"

Spin-triplet Cooper pairs in magnetic hybrids form the foundation of rich and diverse transport phenomena. It is well established that long-range triplet (LRT) correlations can arise at a magnetically inhomogeneous interface with a superconductor. This is commonly achieved using multilayer ferromagnets with non-collinear magnetization. Here, we introduce an alternative, where the LRT supercurrent is generated by the spin texture of a *single* ferromagnet. This is realised in a disk-shaped Josephson junction with a cobalt weak-link, which contains a ferromagnetic vortex.

Our findings demonstrate that spin texture can lead to a non-trivial distribution of spin-triplet supercurrent, where transport tends to be highly localized at the edges of the junction. We show that by tuning its magnetic texture, a single junction can exhibit widely different interference patterns. In this talk, I will evaluate the relevant mechanisms for generating LRT correlations, with an emphasis on the role of spin texture.



Left: schematic of a disk-shaped spin-textured Josephson junction. Right: field-dependent measurements of a spin-textured Josephson junction, showing a clear SQUID pattern.

Serdecznie zapraszamy
Roman Puźniak / Andrzej Szewczyk