



21世紀COE「トポロジー理工学の創成」セミナー

第122回エンレイソウの会

場 所： 工学部3階 A3-62(物理工学系会議室1)

日 時： 平成20年 3月21日(金曜日)

15:00 ~ 16:00

講演者： *Prof. Jan Aarts*

(Kamerlingh Onnes Laboratory, University Leiden, the Netherlands)

題 目： **「Spin switching and spin pumping
in S/F heterostructures」**

要 旨： In the first part of the talk, the scenery of the physics of superconductor/ ferromagnet hybrids will be reviewed, with highlights such as T_c -oscillations, π -junctions, and the recent advent of the phenomenon of odd-frequency pairing, in particular for the case of halfmetallic ferromagnets. In the second part, the focus will shift to weak ferromagnets, where variations in the magnetization direction also should lead to the occurrence of spin triplets. This might be experimentally realizable in F/S/F structures when the magnetization directions of the F-layer are non-collinear. However, even in this so-called spin switch geometry, the experimental situation is not fully clear. Early experiments using combinations of Nb and CuNi show a T_c difference between the parallel (P) and antiparallel (AP) magnetization states, but much smaller than theoretically expected. More recently, we found that domain states can lead to T_c enhancements of similar magnitude, as will be discussed. In the final part of the talk it is shown that transport measurements are not the only way to study phenomena in S/F hybrids, as will be demonstrated on recent ferromagnetic resonance experiments on Niobium / Permalloy bilayers.

エンレイソウの会連絡先

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