Superconducting transport through InAs/GaSb heterostructures
VLAD PRIBIAG, Kavli Institute of Nanoscience, Delft University of Technology, CHRISTOPHE CHARPENTIER, WERNER WEGSCHEIDER, Laboratory for Solid State Physics, ETH Zurich, LEO KOUWENHOVEN, Kavli Institute of Nanoscience, Delft University of Technology — Type-II InAs/GaSb heterostructures have recently attracted interest as a two-dimensional topological insulator that can be tuned between the normal and topological quantum phases by means of electrostatic gating. In proximity to a superconductor, 2D topological insulators are predicted to host Majorana zero-modes, a consequence of the helical nature of their edge conduction modes. Here, we present transport measurements through SNS junctions based on InAs/GaSb with NbTiN superconducting contacts. We observe induced supercurrents and investigate the effects of gating and applied magnetic fields, highlighting the potential for Majorana-detection experiments in this system.

Vlad Pribiag
Kavli Institute of Nanoscience, Delft University of Technology

Date submitted: 15 Nov 2013

Electronic form version 1.4