



Figure 2: Model of a n-MOSFET at cryogenic temperature with a paramagnetic trap close to the  $Si/SiO_2$  interface: the current flows by sequential tunnelling through the island formed in the Silicon channel. The current fluctuates between two levels according to the charge occupation of the interface defect which captures and emits an electron at one of the two separated two-dimensional systems between the central island and the corresponding contact.