



UCL Department of Computer Science
CS M038/GZ06: Mobile and Cloud Computing
2010–2011, Term 2
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One-pager: Interference Cancellation for Wireless LANs (Halperin *et al.*, 2008)
Due: Start of lecture, 25th February 2011

Instructions: *in your own words*, answer the following questions as **succinctly** as possible (in 200–500 words total, but shorter answers within this range are encouraged). Quoting figures or text from the assigned reading or from any other source is specifically prohibited.

Keeping in mind the formula Halperin quotes for the superposition of two signals S_1 and S_2 arriving at a receiver,

$$R(t) = S_1(t) + S_2(t) + N(t),$$

draw constellation diagrams for the following two cases:

1. Power of S_1 is approximately four times power of S_2 , S_1 is a QPSK transmission, S_2 is a BPSK transmission, and SNR of S_2 is approximately 15 dB.
2. Power of S_1 is approximately equal to power of S_2 , S_1 is a BPSK transmission, S_2 is a QPSK transmission, and SNR of S_2 is approximately 15 dB.

In each case, state whether or not SIC works, and why.