Algebra and Number Theory Seminar

Title: A First Try at List Decoding for the Lee metric

Speaker: Daniel Augot (INRIA, Paris)

Date: Mon 1st November 2010 at 4:00PM

Location: Mathematical Sciences Seminar Room

Abstract: The now well known Guruwsami-Sudan list decoding of Reed-Solomon has some descendants, among which is list decoding for soft errors, also know as Koetter–Vardy soft decision decoding of Reed-Solomon codes. In any case, this was hinted at in the article of Guruswami and Sudan, with their "weighted interpolation problem". In this talk, after having recalled the list decoding algorithms for Reed-Solomon and BCH codes for the Hamming metric, and discussing the relevant capacities of the algorithms with respect to the Johnson bound, I will show how to naturally use the weighted interpolation problem to give a try at list decoding for the Lee metric (over fields). Some previous work has been done by Roth and Tal.

http://www-rocq.inria.fr/ augot/index-eng.html