

## Tuesday COLLOQUIUM

# Some space, some randomness, some error

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We will study computations performed with limited memory. This will bring us into contact with several ideas in the area of randomness and computation. We will illustrate these ideas using the following toy example.

The colloquium coordinator orders cookies for all the 200 members in the audience. At the end, each member is allowed to take one cookie. The coordinator has a sheet of paper on which he can keep track of who all picked up cookies. The trouble is that the sheet has space to store just about fifty check marks.

Can the coordinator ensure that nobody takes more than one cookie? **(Answer: No)**

If he does run out of cookies in the end, can he at least identify someone who took more than his share? **(Answer: Yes)**



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**Tuesday, 18<sup>th</sup> January 2011 at 4.30 p.m.**

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