



*Augsburger
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Universität Augsburg*

Vortragsankündigung

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Quasirandom Broadcasting

The classical „randomized rumor spreading“ problem is the following. Given are a finite graph and one of its vertices, which knows a rumor unknown to the other vertices. The rumor is spread in the following manner: In each round, each vertex knowing the rumor contacts a randomly chosen neighbor, which then learns the rumor (provided it did not already know it). How many rounds are necessary to inform all vertices?

Motivated both by the beautiful concept of quasirandomness, in particular, Jim Propp’s rotor router model, or the application of such protocols to synchronize distributed databases, we suggest the following variant. Here, each vertex has a cyclic list of its neighbors. Once informed, vertices inform their neighbors in the order of the list, but starting at a random position.

Among other advantages, this approach has the nice property that you never contact a neighbor twice before having contacted all other neighbors. However, one could be afraid that the reduced use of independent randomness may lead to problems, either by actually increasing the time needed to spread the rumor, at least for unlucky choices of the cyclic lists, or by causing difficulties to prove sharp bounds.

Surprisingly, all this does not happen. In the talk, I shall present some recent results on this problem.

Zeit: Donnerstag, 30.07.2009, 16 Uhr s.t.

Ort: Alte Universität, Raum 207, Eichleitnerstr. 30