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An efficient FPRAS type group testing procedure to approximate the number of defectives.

Summary: In many fault detection problems, we want to detect or identify defective items in a sample set by using the minimum number of tests. Group testing is for the scenario where each test is on a subset of items, and tells whether the subset contains at least one defective item or not. Another practically important problem is to estimate the number of defective items in a sample set. In this paper, we present an efficient FPRAS (fully polynomial-time randomized approximation scheme) type group testing procedure to approximate the number of defective items in a sample set.

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fault detection; group testing; randomized algorithm; FPRAS

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References:

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