Freiburg, February 1, 2012 Discussion: February 7, 2012

Exercise for the lecture Algorithms for Radio Networks Winter 2011/12 Sheet 12

EXERCISE 12:

1. Consider the following network graph where the numbers at the edges denote the edge capacities.



- Find the maximum flow from the source S to the destination D by applying the Edmonds-Karp algorithm. Show the path found during each step from S to D in separate figure.
- Find the minimum cut in the network graph given above.
- 2. Consider the functions $P_s(t) = 2(\sin(t) + 1)$ and $P_c(t) = \cos(t)^2$.
 - Prove that these functions describe benign energy sources and benign energy demand by computing the parameters ρ₁, ρ₂, σ₁,..., σ₄.
 - Compute the minimum initial energy B_0 such that there is continuous operation in the ideal setting.
 - Assume $\eta = 0.4$ and no energy leakage. Is it possible to operate this node continuously?