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14. Mathematical Aspects of Computer Science

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Dusembaev, Anuar, National University of Kasakhstan, Kasakhstan

An operator approach to program segmentation

Relocating blocks of a program over segments of virtual memory to minimize a cost functional is known NP- complete problem. Exact solutions of this problem are obtained under very restricted conditions but most of the practical solutions are heuristic. Consider $Au = f$ where $ufromU$ is the segmentation task ; $ffromF$ is the segmentation matrix and $AfromH$ is unknown operator which is desired to be constructed for any $ufromU$. If H is an special algebra then the conditions for solvability of the problem of $Au = f$ will be given. The expression of A^*fromH for $u^*fromU^*subsetU$ with f^*fromF and the description of the subset U^* will be presented. Reference: A. E. Dusembaev, One way to program segmenting, *Russian Math. Doklady.* **329, 6** (1993), 711-714.