



بسم الله الرحمن الرحيم

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A NEW ALGORITHM FOR SOME LINEAR COMPLEMENTARITY PROBLEMS WITH APPLICATIONS

By

IMAN MOHAMED SHABAN SHARAF

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A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy
in
Engineering Mathematics

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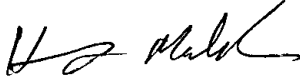
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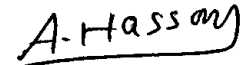
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AN ALGORITHM FOR SOME COMBINATORIAL PROBLEMS WITH APPLICATIONS

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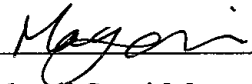
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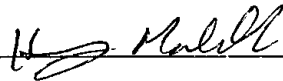
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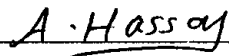
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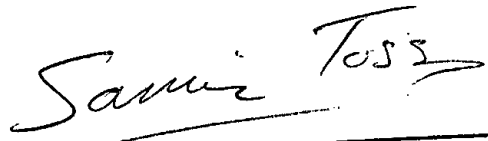
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List of Abbreviations

AVI	Affine variational inequality
BLCP	The bounded linear complementarity problem
BLNP	Bilinear programming
BLVP	Bilevel linear program
CQP	Convex quadratic programming
GLCP	The generalized linear complementarity problem
HLCP	The horizontal linear complementarity problem
IPMs	Interior point methods
LCP	Linear complementarity problem
LP	Linear programming
LPP	Linear programming problem
MLCP	The mixed linear complementarity problem
MPEC	Mathematical programming with equilibrium constraints
NCP	Nonlinear complementarity problem
NE	Nonlinear equations
PD	Positive definite
PSD	Positive semidefinite
QP	Quadratic programming
QPP	Quadratic programming problem
SLCP	Sequential Linear complementarity problem
SOR	Successive overrelaxation
SQP	Sequential quadratic programming
UIP	Unified interior point method
VCP	The vertical complementarity problem
VI	Variational inequality
VLCP	The vertical linear complementarity problem
XLCP	The extended linear complementarity problem

