بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

شبكة المعلومات الجامعية

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MONA MAGHRABY

شبكة المعلومات الجامعية
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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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MONA MAGHRABY

Ain Shams University
Faculty of Engineering

DEVELOPMENT OF REGIME EQUATIONS FOR THE DESIGN OF EGYPTIAN CANALS

By:
Ahmed Abd El-Moniem Arafa Albably
(B.Sc. in Civil Engineering, 2012)

A Thesis Submitted to the
Faculty of Engineering – Ain Shams University
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Development Of Regime Equations For The Design Of Egyptian Canals

By

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A Thesies Submitted for the Partial Fulfillment of the Master Degree

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Symbol	*Definition*	Dimensions	units
A	*Cross-section Area*	$[L^2]$	m^2
B	*Bed width*	$[L]$	m
C	*Chezy coefficient*	$[L^{1/2}.T]$	$m^{1/2}.s$
d_{50}	*median size of sediment particle*	$[L]$	mm
f	*Lacey silt factor*	$[L.T^2]$	m/s^2
F_b	*Bed factor*	$[L.T^2]$	m/s^2
Fr	*Froude number*	-----	-----
F_s	*Side factor*	$[L^2.T^{-3}]$	m^2/s^3
g	*gravitational acceleration*	$[L.T^{-2}]$	m/s^{-2}
n	*Manning's roughness coefficient*	$[L^{1/6}]$	$m^{1/6}$
p	*wetted perimeter of the water cross-section*	$[L]$	m
Q	*discharge*	$[L^3.T^{-1}]$	m^3/s
R	*hydraulic radius, (R = A/P) (m)*	$[L]$	m
S	*Water surface slope*	-----	cm/km
T_w	*Top width (width at the water surface)*	$[L]$	m
V	*mean flow velocity*	$[L.T^{-1}]$	m/s
Y	*mean flow depth*	$[L]$	m
ρ	*Density of water*	$[M.L^{-3}]$	Kg/m^3
μ	*Dynamic viscosity*	$[M.L^{-1}.T^{-1}]$	Kg/m.s

Abbreviations

CMRI	Channel Maintenance Research Institute
GPS	global positioning system
HAD	High Aswan dam
NWRC	National Water Research Center
P.P.M	Parts per million
SPSS	statistical package for social science