

Contents

Preface.....	ix
--------------	----

Mechanisms and modelling of root reinforcement on slopes

The influence of cellulose content on tensile strength in tree roots..... <i>Marie Genet, Alexia Stokes, Franck Salin, Slobodan B. Mickovski, Thierry Fourcaud, Jean-François Dumail & Rens van Beek</i>	3
Novel biomechanical analysis of plant roots..... <i>O. Hamza, A.G. Bengough, M.F. Bransby, M.C.R. Davies, C. Halpin & P.D. Hallett</i>	13
Root reinforcement: analyses and experiments..... <i>Tien H. Wu</i>	21
Root strength and root area ratio of forest species in Lombardy (Northern Italy)..... <i>Gian Battista Bischetti, Enrico A. Chiaradia, Tommaso Simonato, Barbara Speziali, Barbara Vitali, Paolo Vullo & Antonio Zocco</i>	31
Biotechnical characteristics of root systems of typical Mediterranean species..... <i>Chiara Mattia, Gian Battista Bischetti & Francesco Gentile</i>	43
Uprooting of vetiver uprooting resistance of vetiver grass (<i>Vetiveria zizanioides</i>)..... <i>S.B. Mickovski, L.P.H van Beek and F. Salin</i>	53
Root reinforcement by hawthorn and oak roots on a highway cut-slope in Southern England..... <i>Joanne E. Norris</i>	61
Protection roles of forest and non-forest woody species on slopes in Iran..... <i>Ghassem Habibi Bibalani, Baris Majnonian, Ebrahim Adeli, and Homauon Sanii</i>	73
Reinforcement of tree roots in slope stability: A case study from the Ozawa slope in Iwate Prefecture, Japan <i>H. Nakamura, Q.M. Nghiem & N. Iwasa</i>	81
Observation and simulation of root reinforcement on abandoned Mediterranean slopes..... <i>L.P.H. van Beek, J. Wint, L.H. Cammeraat & J.P. Edwards</i>	91
Slope stabilisation by perennial ‘gramineae’ in Southern Italy: plant growth and temporal performance..... <i>D. Cazzuffi, A. Corneo & E. Crippa</i>	111

Root system morphology and anchorage

Root system asymmetry of Mediterranean pines..... <i>P. Ganatsas & I. Spanos</i>	127
---	-----

Root morphology, stem growth and field performance of seedlings of two Mediterranean evergreen oak species raised in different container types.....	135
<i>M. Tsakalimi, T. Zagas, T. Tsitsoni & P. Ganatsas</i>	
Stabilising characteristics of New Zealand indigenous riparian colonising plants.....	143
<i>M. Marden, D. Rowan & C. Phillips</i>	
Mechanical resistance of different tree species to rockfall in the French Alps.....	155
<i>Alexia Stokes, Franck Salin, Adzo Dzifa Kokutse, Stéphane Berthier, Henri Jeannin, Shaun Mochan, Luuk Dorren, Nomessi Kokutse, Murad Abd. Ghani & Thierry Fourcaud</i>	
Root morphology and strain distribution during tree failure on mountain slopes.....	165
<i>Alexia Stokes, Murad Abd. Ghani, Franck Salin, Frédéric Danjon, Henri Jeannin, Stéphane Berthier, Adzo Dzifa Kokutse & Henri Frochot</i>	
A numerical investigation into the influence of soil type and root architecture on tree anchorage	175
<i>Lionel Dupuy, Thierry Fourcaud & Alexia Stokes</i>	
 Methodology applied to eco- and ground bio-engineering	
SLIP4EX—A program for routine slope stability analysis to include the effects of vegetation, reinforcement and hydrological changes	193
<i>John R. Greenwood</i>	
Site investigation for the effects of vegetation on ground stability	203
<i>John R. Greenwood, Joanne E. Norris & Jo Wint</i>	
Mechanics of root-pullout from soil: A novel image and stress analysis procedure.....	213
<i>O. Hamza, A.G. Bengough, M.F. Bransby, M.C.R. Davies & P.D. Hallett</i>	
Dendrogeomorphological observations in a landslide on Tymfristos mountain in Central Greece.....	223
<i>A.M. Papadopoulos, A. Mertzanis & A. Pantera</i>	
Monitoring ground bio-engineering stabilization of landslides in Lazio Region, Italy	231
<i>Federico Preti & Chiara Milanese</i>	
The use of geostatistical techniques applied to soil conservation of low-density woodlands.....	239
<i>T. Panagopoulos</i>	
A computer system using two membership functions and T-Norms for the calculation of mountainous water-sheds torrential risk: The case of lakes Trixonida and Lisimaxia	247
<i>F. Maris & L. Iliadis</i>	
Comparison between two low cost photogrammetric systems: The analytical instrument Adam ASP2000 and the digital photogrammetric station DVP.....	255
<i>Vasilios C. Drosos, Nikos S. Karantzidis and Vasilios J. Giannoulas</i>	

Applications at the slope level

Vegetative-based technologies for erosion control.....	265
<i>R.P.C. Morgan</i>	
Vegetation succession and its consequences for slope stability in SE Spain.....	273
<i>Erik Cammeraat, Rens van Beek & Annemieke Kooijman</i>	
Hedge brush layers and live crib walls—stand development and benefits.....	287
<i>Rosemarie Stangl</i>	
Vegetation dynamics on sediment deposits upstream of bioengineering works in mountainous marly gullies in a Mediterranean climate (Southern Alps, France).....	297
<i>F. Rey, F. Isselin-Nondedeu & A. Bédécarrats</i>	
Implementation and monitoring of soil bioengineering measures at a landslide in the Middle Mountains of Nepal.....	309
<i>Walter Lammeranner, Hans Peter Rauch & Gregor Laaha</i>	
Beech coppice short-term hydrological balance for simulated rainfall	321
<i>P. Trucchi & M.C. Andrenelli</i>	
Beech coppice leaf cover and gross rainfall quali–quantitative transformation in simulated rainfall events of high intensity	329
<i>P. Trucchi & M.C. Andrenelli</i>	
Effect of repeated fire on plant community recovery in Penteli, central Greece	337
<i>G. Goudelis, P.P. Ganatsas, I. Spanos & A. Karpi</i>	
Effects of postfire logging on soil and vegetation recovery in a <i>Pinus halepensis</i> Mill. forest of Greece	345
<i>Ioannis Spanos, Yannis Raftoyannis, Gerasimos Goudelis, Eleni Xanthopoulou, Theano Samara & Alexandros Tsiontsis</i>	
The contribution of agrotechnical works following a fire to the protection of forest soils and the regeneration of natural forest.....	353
<i>M.A. Sapountzis, G.S. Efthimiou & P.S. Stefanidis</i>	
Decision support systems in eco-engineering: the case of the SDSS.....	361
<i>Slobodan B. Mickovski</i>	
A decision support system for the evaluation of eco-engineering strategies for slope protection.....	369
<i>S.B. Mickovski & L.P.H. Van Beek</i>	

Eco- and ground bio-engineering case studies by practitioners

Land restoration for the Olympic Games in Athens, Greece: Case study Lycabettus slopes (cycle road).....	381
<i>Julia Georgi</i>	

Herbaceous plant cover establishment on highway road sides.....	387
<i>Z. Koukoura, A. Kyriazopoulos & I. Karmiris</i>	
Erosion control by application of hydroseeding methods along the Egnatia Motorway (Greece).....	393
<i>M. Katritzidakis, A. Liapis, I. Stathakopoulos, E. Pipinis, G. Kekis, E. Ververidou & E. Sevastou</i>	
Restoration of slopes disturbed by a motorway company: Egnatia Odos, Greece.....	401
<i>M. Katritzidakis, E. Pipinis, A. Liapis, I. Stathakopoulos, G. Kekis, E. Ververidou & E. Sevastou</i>	
Instability effects of the landforms, in artificially modulated banks along the road	
Thermopylae–Nafpaktos (Ftiotida, Greece).....	411
<i>A. Mertzanis, A. Papadopoulos & A. Pantera</i>	
Evaluation of revegetation techniques on mining spoil slopes	419
<i>G. Brofas, G. Mantakas, K. Tsagari & Ch. Mermiris</i>	
Revegetation on steep slopes and in subalpine areas using biennial cover plants:	
A review of huter's technique.....	427
<i>J. Heumader</i>	
Comparison of revegetation techniques on alpine slopes prone to avalanches and erosion.....	433
<i>T. Schmid, U. Mueller, F. Tognini & J. Meyer</i>	