

Scientific papers on ‘Taper functions’

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14 ago 2018

Introduction

2018 Forest Inventory course - Collective students’ work

Students, as homework, were asked to search for scientific papers presenting ‘taper functions’ and to compile a collective Rmarkdown document shared using GIT.
Rearranging their work, this document lists their findings.

Results of students’ searches

Article ID: 1 ::= (Scolforo, et al., 2018)

Comparison of taper functions applied to eucalypts of varying genetics in {Brazil}: application and evaluation of the penalized mixed spline approach

Student	
Title.student	Comparison of taper functions applied to eucalypts of varying genetics in Brazil: Application and evaluation of the penalized mixed spline approach
Authors.student	Scolforo, H.F., McTague, J.P., Raimundo, M.R., Weiskittel, A., Carrero, O., Scolforo, J.R.S.
Year.student	2017
Species	Eucalypts
Base.URL	http://www.nrcresearchpress.com/doi/10.1139/cjfr-2017-0366#.W2Sb6Lhx02w
Paper.local.file	
Equations	

Article ID: 2 ::= (Warner, et al., 2016)

Development and evaluation of teak ({Tectona} grandis {L}.f.) taper equations in northern {Thailand}

Article ID: 3 ::= (Tang, et al., 2016)

Development of a {Compatible} {Taper} {Function} and {Stand}-{Level} {Merchantable} {Volume} {Model} for {Chinese} {Fir} {Plantations}

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Student	Angelo Manca
Title.student	Development and evaluation of teak (<i>Tectona grandis</i> L.f.) taper equations in northern Thailand,
Authors.student	Andrew J. Warner, Monton Jamroenprucksas, Ladawan Puangchit,
Year.student	2016
Species	<i>Tectona grandis</i> L.f.
Base.URL	https://www.sciencedirect.com/science/article/pii/S2452316X16302459?via%3Dihub
Paper.local.file	1-s2.0-S2452316X16302459-main.pdf
Equations	2016WarnerEtAl.png

Student	
Title.student	Development of a Compatible Taper Function and Stand-Level Merchantable Volume Model for Chinese Fir Plantations
Authors.student	Xiaolu Tang, César Pérez-Cruzado, Lutz Fehrmann, Juan Gabriel Álvarez-González, Yuanchang Lu, and Christoph Kleinn,
Year.student	2016
Species	<i>Cunninghamia lanceolata</i> [Lamb.] Hook
Base.URL	https://www.ncbi.nlm.nih.gov/pubmed/26799399
Paper.local.file	pone.0147610.pdf
Equations	2016TangEtAl.png

Article ID: 4 ::= (Corral-Rivas, et al., 2017)

Compatible {System} for {Predicting} {Total} and {Merchantable} {Stem} {Volume} over and under {Bark}, {Branch} {Volume} and {Whole}-{Tree} {Volume} of {Pine} {Species}

Student	Maria Chiara Ruggiu
Title.student	Compatible System for Predicting Total and Merchantable Stem Volume over and under Bark, Branch Volume and Whole-Tree Volume of Pine Species”
Authors.student	José Javier Corral-Rivas, Daniel Jose Vega-Nieva, Roque Rodríguez-Soalleiro, Carlos Antonio López-Sánchez, Christian Wehenkel, Benedicto Vargas-Larreta, Juan Gabriel Álvarez-González and Ana Daría Ruiz-González.
Year.student	2017
Species	<i>Pinus cooperi</i> , <i>Pinus durangensis</i>
Base.URL	http://www.mdpi.com/1999-4907/8/11/417
Paper.local.file	forests-08-00417-v2.pdf
Equations	2017Corral-RivasEtAlOb.png
Equations	2017Corral-RivasEtAlUb.png

Article ID: 5 ::= (Sun, et al., 2016)

Deriving {Merchantable} {Volume} in {Poplar} through a {Localized} {Tapering} {Function} from {Non}-{Destructive} {Terrestrial} {Laser} {Scanning}

Article ID: 6 ::= (Martins, et al., 2017)

Estimativa do {Afilamento} do {Fuste} de {Araucária} {Utilizando} {Técnicas} de {Inteligência} {Artificial}

Student	Matteo Piccolo
Title.student	Deriving Merchantable Volume in Poplar through a Localized Tapering Function from Non-Destructive Terrestrial Laser Scanning
Authors.student	Yuan Sun, Xinlian Liang, Ziyu Liang, Clive Welham and Weizheng Li
Year.student	2016
Species	Populus \times canadensis Moench cv.
Base.URL	http://www.mdpi.com/1999-4907/7/4/87/htm
Paper.local.file	forests-07-00087.pdf
Equations	2016Sunetal.png

Student	
Title.student	Araucaria Stem Taper or Use of Artificial Intelligence Techniques
Authors.student	Ana Paula Marques Martins, Aline Bernarda Debastiani, Allan Libanio Pelissari, Sebastião do Amaral Machado, Carlos Roberto Sanquetta
Year.student	2017
Species	Araucaria angustifolia
Base.URL	http://www.scielo.br/scielo.php?script=sci_arttext&pid=S2179-80872017000100152
Paper.local.file	2179-8087-floram-24-e20160234.pdf
Equations	

Article ID: 7 ::= (Silva, et al., 2006)

Fitting a taper function to minimize the sum of absolute deviations

Student	
Title.student	Fitting a taper function to minimize the sum of absolute deviations
Authors.student	Lana Mirian Santos da Silva, Luiz Carlos Estraviz Rodriguez, José Vicente Caixeta Filho; Simone Carolina Bauch
Year.student	2006
Species	Eucalyptus
Base.URL	http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-90162006000500007
Paper.local.file	31406.pdf
Equations	

Article ID: 8 ::= (Arnoni Costa, et al., 2016)

{FUNÇÃO} {DE} {AFILAMENTO} {E} {SORTIMENTOS} {DE} {MADEIRA} {PARA} {Araucaria} angustifolia

Article ID: 9 ::= (Souza, et al., 2008)

Modelos de afilamento para o sortimento do fuste de {Pinus} taeda {L}

Article ID: 10 ::= (Arias-Rodil, et al., 2015)

Fitting and {Calibrating} a {Multilevel} {Mixed}-{Effects} {Stem} {Taper} {Model} for {Maritime} {Pine} in {NW} {Spain}

Student	
Title.student	Taper function and timber assortments for Araucaria angustifolia
Authors.student	Emanuel Arnoni Costa, César Augusto Guimarães Finger, Paulo Renato Schneider, André Felipe Hess
Year.student	2016
Species	Araucaria angustifolia
Base.URL	http://www.redalyc.org/articulo.oa?id=53446151016
Paper.local.file	53446151016.pdf
Equations	

Student	
Title.student	Taper function for assortment of Pinus taeda L. stem
Authors.student	Carlos Alberto Martinelli de Souza, Tatiane Chassot, César Augusto Guimarães Finger, Paulo Renato Schneider, Frederico Dimas Fleig
Year.student	2008
Species	Pinus taeda L
Base.URL	http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-84782008000900014
Paper.local.file	a14v38n9.pdf
Equations	

Article ID: 11 ::= (Rodríguez, et al., 2015)

Comparison of stem taper equations for eight major tree species in the {Spanish} {Plateau}

Article ID: 12 ::= (Nájvar, et al., 2013)

Taper functions and merchantable timber for temperate forests of northern {Mexico}

Article ID: 13 ::= (Zşelik, et al., 2017)

Stem taper and volume models for natural cedar and {Taurus} fir mixed stands in {Bucak} {District}

Article ID: 14 ::= (Machado, et al., 2005)

Comparação de métodos de estimativa de volume para {Pinus} oocarpa em diferentes idades e diferente regimes de desbastes

References

Zşelik, R, et al. (2017). “Stem taper and volume models for natural cedar and Taurus fir mixed stands in Bucak District”. In: *İstanbul İktisadi ve İdari Bilimler Üniversitesi Orman Fakültesi Dergisi* 67.2, pp. 1-1. ISSN: 0535-8418. DOI: 10.17099/jffiu.290845.

Arias-Rodil, M, et al. (2015). “Fitting and Calibrating a Multilevel Mixed-Effects Stem Taper Model for Maritime Pine in NW Spain”. En. In: *PLOS ONE* 10.12. Ed. by M. Reigosa, p. e0143521. ISSN: 1932-6203. DOI: 10.1371/journal.pone.0143521.

Student	
Title.student	Fitting and Calibrating a Multilevel Mixed-Effects Stem Taper Model for Maritime Pine in NW Spain
Authors.student	Manuel Arias-Rodil, Fernando Castedo-Dorado, Asunción Cámara-Obregón, Ulises Diéguez-Aranda
Year.student	2015
Species	Pinus pinaster Ait.
Base.URL	http://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC4668033&blobtype=pdf
Paper.local.file	pone.0143521.pdf
Equations	

Student	
Title.student	Comparison of stem taper equations for eight major tree species in the Spanish Plateau
Authors.student	Francisco Rodríguez1, Iñigo Lizarralde1 and Felipe Bravo
Year.student	2015
Species	Various
Base.URL	http://revistas.inia.es/index.php/fs/article/view/6229
Paper.local.file	6229-27194-1-PB.pdf
Equations	

Arnoni Costa, E, et al. (2016). “FUNÇÃO DE AFILAMENTO E SORTIMENTOS DE MADEIRA PARA *Araucaria angustifolia*”. Português. In: *Ciência Florestal* 26.2, pp. 523-533. ISSN: 0103-9954. (Visited on lug. 28, 2018).

Corral-Rivas, J, et al. (2017). “Compatible System for Predicting Total and Merchantable Stem Volume over and under Bark, Branch Volume and Whole-Tree Volume of Pine Species”. En. In: *Forests* 8.11, p. 417. ISSN: 1999-4907. DOI: 10.3390/f8110417.

Machado, S. d. A, et al. (2005). “Comparação de métodos de estimativa de volume para *Pinus oocarpa* em diferentes idades e diferente regimes de desbastes”. In: *Pesquisa Florestal Brasileira* 2005.50 (jan./jun.).

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Nájvar, J, et al. (2013). “Taper functions and merchantable timber for temperate forests of northern Mexico”. In: *Annals of Forest Research* 56.1. ISSN: 20652445.

Rodríguez, F, et al. (2015). “Comparison of stem taper equations for eight major tree species in the Spanish Plateau”. In: *Forest Systems* 24.3, p. e034. ISSN: 2171-9845, 2171-5068. DOI: 10.5424/fs/2015243-06229.

Scolforo, H. F, et al. (2018). “Comparison of taper functions applied to eucalypts of varying genetics in Brazil: application and evaluation of the penalized mixed spline approach”. En. In: *Canadian Journal of Forest Research* 48.5, pp. 568-580. ISSN: 0045-5067, 1208-6037. DOI: 10.1139/cjfr-2017-0366.

Silva, L. M. S. d, et al. (2006). “Fitting a taper function to minimize the sum of absolute deviations”. In: *Scientia Agricola* 63.5, pp. 460-470. ISSN: 0103-9016. DOI: 10.1590/S0103-90162006000500007.

Souza, C. A. M. d, et al. (2008). “Modelos de afilamento para o sortimento do fuste de *Pinus taeda* L”. In: *Ciência Rural* 38.9, pp. 2506-2511. ISSN: 0103-8478. DOI: 10.1590/S0103-84782008000900014.

Sun, Y, et al. (2016). “Deriving Merchantable Volume in Poplar through a Localized Tapering Function from Non-Destructive Terrestrial Laser Scanning”. En. In: *Forests* 7.12, p. 87. ISSN: 1999-4907. DOI: 10.3390/f7040087.

Student	
Title.student	Taper functions and merchantable timber for temperate forests of northern Mexico
Authors.student	J. Návar, F. de Jesús Rodríguez-Flores, P.A. Domínguez-Calleros
Year.student	2013
Species	P.pseudostrobus, P. hartwegii, P. cooperi, P. ayacahuite, Q. spp, P. durangensis, P. leiophylla, P. teocote, P. arizonica, Quercus spp
Base.URL	http://www.editurasilvica.ro/afr/56/1/navar.pdf
Paper.local.file	navar.pdf
Equations	

Student	
Title.student	Individual taper models for natural cedar and Taurus fir mixed stands of Bucak Region, Turkey
Authors.student	Ramazan Özçelik, Osman Dirican
Year.student	2017
Species	Cedrus libani A. Rich., Abies cilicica Carr.
Base.URL	http://dergipark.gov.tr/download/article-file/330518
Paper.local.file	10.17099-jffiu.290845-330518.pdf
Equations	

Tang, X, et al. (2016). “Development of a Compatible Taper Function and Stand-Level Merchantable Volume Model for Chinese Fir Plantations”. En. In: *PLOS ONE* 11.1. Ed. by R. Wu, p. e0147610. ISSN: 1932-6203. DOI: 10.1371/journal.pone.0147610.

Warner, A. J, et al. (2016). “Development and evaluation of teak (*Tectona grandis* L.f.) taper equations in northern Thailand”. En. In: *Agriculture and Natural Resources* 50.5, pp. 362-367. ISSN: 2452316X. DOI: 10.1016/j.anres.2016.04.005.

Student	
Title.student	Comparação de Métodos de Estimativa de Volume para Pinus oocarpa em Diferentes Idades e Diferentes Regimes de Desbastes
Authors.student	Sebastião do Amaral Machado, Edilson Urbano, Marcio Barbosa da Conceição
Year.student	2005
Species	Pinus oocarpa
Base.URL	https://pfb.cnpf.embrapa.br/pfb/index.php/pfb/article/view/242/193
Paper.local.file	242-1027-1-PB.pdf
Equations	
