



FORMEC

Spain 2018

PROGRAM

SPONSORS & COLLABORATING INSTITUTIONS:



 <p>cese for Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León</p>	 <p>Smurfit Kappa Central Forestal</p>
 <p>Gestamp Biomass</p>	 <p>Ciemat Ceder Centro de desarrollo de energías renovables <i>We are developing the new bioeconomy for a hundred percent renewable future</i></p>
 <p>SONAE ARAUCO Taking wood further</p>	 <p>GUFOR</p>
 <p>TMFOREST</p>	 <p>Junta de Castilla y León Consejería de Fomento y Medio Ambiente</p>
 <p>ECOSTAR NATURAL TALENTS</p>	 <p>IUFRO Interconnecting Forests, Science and People</p>
 <p>CROATIAN JOURNAL OF FOREST ENGINEERING ISSN 1846 - 0719</p>	

24.09.2018	Registration & Icebreaker (Hotel VP Metropolitano, Avda. Reina Victoria, 12. Cuatro Caminos Metro Station)
19:30-21:30	Registration
20:00-21:30	Icebreaker
25.09.2018	CONFERENCE DAY 1: E.T.S.I. Montes, Forestal y del Medio Natural. Technical University of Madrid (U.P.M.)
08:30-09:00	Registration. Entrance Hall, Forestales Building (E.T.S.I. Montes, Forestal y del Medio Natural. Technical University of Madrid, U.P.M.)
09:00-09:30	Opening Ceremony [Room: Aula Magna (Forestales Building)] F0. Welcome by: Univ. Prof. Dr. Francisco Javier Jiménez Leube, Vice-Dean of Institutional Communication and Promotion Technical University of Madrid (U.P.M.) and Univ. Prof. Dr. José Ramón González Adrados, Deputy Director of U.P.M. Forestry Faculty (Montes) Head of the Organizing Committee of FORMEC 2018. Univ. Prof. Dr. Eduardo Tolosana Head of the Organizing Committee of FORMEC 2019 Hungary. Univ. Prof. Dr. Imre Czupy
09:30-11:00 (3x30 min)	Plenary Session I - Keynote Speakers [Room: Aula Magna (Forestales Building)] F0 Moderator: Eduardo Tolosana Mechanization of forest operations: new developments, trends and challenges. Dr. Raffaele Spinelli (CNR-IVALSA, ITALY) TQM: Applications to forest mechanized harvesting planning and control: the ENCE Spanish case-study in Eucalyptus operations. Eng. Manuel López Sánchez. (Supply Processes Department of the Pulpmill and Energy Producer ENCE, Spain) State of the art of European tower yarder manufacturers and models. Univ.Prof. Dr. Karl Stampfer (University of Natural Resources and Life Sciences, Austria).
11:00-11:30	Coffee Break
11:30-13:00 (3x30 min)	Plenary Session II - Keynote Speakers [Room: Aula Magna (Forestales Building)] F0 Moderator: Eduardo Tolosana Frontiers in Logistics optimization of wood and biomass supply chains. Univ. Prof. Dr. Mauricio Acuña (Sunshine Cost University, Australia) Mechanization and operational control in wildfire fighting. Eng. Juan Bautista García Ejido, Head of Fire Fighting Operations (GEACAM, Spain) Innovative wildfire preventive mechanized operations. Dr. Luis Saul Esteban Pascual (Renewable Energy Research Center CEDER – CIEMAT, Spain)
13:00-14:30	Lunch Break (Forestales Building)
14:30-15:00	Poster Session (Entrance Hall, Forestales Building)

15:00-17:00	Session A1 - [Room: F1 Seminary Hall, Forestales] Forestry contractors and enterprises Moderator: Ola Lindroos	Session A2 - [Room: F0 Aula Magna, Forestales] Infrastructural planning for forest operations Moderator: Andreja Đuka	Session A3 - [Room: M0 Aula Magna, Montes Building] The human factor in forest operations: new developments in ergonomics, safety and health Moderator: Emmanuel Cacot	Session A4 - [Room: M1 Degree Hall, Montes Building] Mechanized systems and planning tools for forest fire prevention. Moderator: Andrea Laschi
(6 x 20 min)	1. The TECH4EFFECT Efficiency Portal: architecture, challenges, and preliminary outcomes of an ambitious benchmarking system. Astrup, R. , N. Strange , P. J. Kerstens , P. Bogetoft , H.-U. Dietz , G. Aalmo , B. Talbot .	1. Optimizing the layout of an existing forest road network in steep terrain. Bont, L. G.	1. Physical strain, exposure to noise and postural assessment of motor-manual felling of willow short rotation coppice using brush cutters. Borz, S. A. , N. Talagai , M. Čeča , D. Chiriloiu , A. Gavilanes & D. D. Castillo	1. Industrial stress-test of a Magnetic resonance moisture meter for woody biomass in Mediterranean conditions. Aminti, G. , A. Cinotti , C. Lombardini , R. Spinelli & G. Picchi
	2. Energy efficiency of small and medium-sized enterprises in wood procurement: a case study of Stora Enso in Finland. Haavikko, H. , K. Kärhä , M. Hourula & T. Palander	2. Developing methods for truck route selection and cost modelling in steeper topographies. Fjeld, D. , M. Rönqvist & P. Flisberg	2. Smart Chainsaw - ICT and IOT on manual chainsaw operation for safety and productivity at forestry operation. Nitami, T. & S. Sooil	2. Fuel load reduction with mechanized harvesting equipment: productivity results from trials in Australia. Acuña, M. & G. Murphy
	3. The European Chainsaw Certificate (ECC) since 2009 to 2018: development and activities. Neri, F. , F. Fabiano , A. Laschi , P. Cielo & R. M. Ricart	3. A spatially explicit timber harvesting and transport model. Fraefel, M. , L. G. Bont & C. Fischer .	3. The variability in visual perception of a working space of a harvester's operator. Sowa, J. M. , G. Szweczyk & J. Groborz	3. Post-fire regenerated mixed stand thinning and biomass harvesting with a Fixteri feller-bundler in Spain: environmental, productivity and cost analysis. Tolosana, E. & R. Laina
	4. Web-based service for assessment of forestry contractors – the case of Slovenia. Krajnc, N. & M. Triplat	4. Terrain classification for timber harvesting and forest accessibility. Janeš, D. , A. Đuka , I. Papa , T. Poršinsky , Ž. Tomašić & T. Pentek	4. Evaluation and Comparison of Forest Machinery Operators' Cardiovascular Workload. Landekić, M. , M. Šporčić , I. Martinić , M. Šušnjar , Z. Pandur & M. Bačić	4. Biomass collection from wildfire prevention treatment on Rockrose shrublands using a brushcutter-bundler Biobaler WB55 in Soria (Spain). Bados, R. , Tolosana, E. & Esteban, L. S.
	5. Lessons learnt from capacity building research-action with professional wood mobilisers: tackling the knowledge-transfer challenge. Vuillermoz, M. , P. Ruch & P. Magaud	5. Productivity and Economic Impacts of Harvesting with Spatial and Size Constraints. Acuña, M. & G. Murphy	5. Fitting Health and Safety Measures to Needs and Conditions of Enterprises Kastenholz, E. , H. Habenicht , J. Kampe , K. Klöber , C. Kreil , J. Morat , S. Paritschkow , A. Teutenberg , F. Zahnreich & U. Seeling	5. Natural drying of Aleppo pine (<i>Pinus halepensis</i> Mill.) biomass. Vusić, D. , Z. Benčik , T. Kos & Ž. Zečić
	6. Analysis of Forest Enterprises in Catalonia. Martínez-Trepat, J. , P. Navarro , J. Pemán & G. Picchi .	-----	-----	-----
17:00-20:00	Free time			
20:00-22:00	Conference Dinner (La Azotea de San Anton, Chueca Metro Station, City Center)			

11:00-13:00	Session C1 - [Room: F1 Seminary Hall, Forestales] Productivity study of innovative forest operations Moderator: Janine Schweier	Session C2 - [Room: F0 Aula Magna, Forestales] Biomass supply chains: logistics and optimization Moderator: Mauricio Acuña	Session C3 - [Room: M0 Aula Magna, Montes Building] Environmental effects of forest operations, what do we know and what for? Moderator: Antti Asikainen	Session C4 - [Room: M1 Degree Hall, Montes Building] Biomass: potential evaluation, processes and technologies Moderator: Kalle Kärhå
(6 x 20 min)	1. Productivity, Efficiency and Environmental Effects of Whole-Tree Harvesting in Spanish Coppice Stands Using a Drive-to-Tree Disc Saw Feller-Buncher. Tolosana, E., R. Spinelli, G. Aminti, R. Laina & I. Lopez-Vicens	1. Multiple biomass feedstock harvest and logistics in the Northeastern United States. Wang, Y., J. Wang, D. Hartley & J. Schuler	1. Effect of soil compaction on tree growth: a meta-analysis. Cambi, M., B. Mariotti, E. Marra, E. Paoletti, Z. Feng, E. Marchi & Y. Hoshika	1. Modeling the Realistically Sustainable Potential of Forest Wood Supplies for Energetic use. Thees, O., M. Erni, R. Lemm, G. Stadelmann & E. Zenner
	2. Implementation of medium-sized harvesters in coppice stands: Performance and potential environmental risks. P. A. Tsioras, Z. Karaszewski, P. S. Mederski & M. Bembenek	2. Simulation of mobile wood chip production considering uncertainty inside a supply chain. Yoshida, M.	2. Environmental impacts of forest harvesting operations along a gradient of mechanization. Lemmer, K. J. & E. R. Labelle	2. Forestry residues as potential base material of heat production. Czupy, I., V. Papp, D. Szalay, B. Horváth & A. Vágvölgyi
	3. Productivity of CTL harvesters in hardwood harvesting. Breinig, L., E. Sycheva & E.R. Labelle	3. Supply potential and cost of forest biomass for the small and large-scale demand sites at the regional level in Finland. Karttunen, K., M. Laihanen, A. Karhunen & T. Ranta	3. Sustainable Forest Operations (SFO): a new paradigm. Nordfjell, T., E. Marchi, W. Chung, R. Visser, D. Abbas, P.S. Mederski, A. McEwan, M. Brink & . Laschi.	3. Production of microchips as a surrogate of pellets: techniques and cost. Spinelli, R. & N. Magagnotti
	4. Analysing the efficiency of mechanised thinning in broadleaf stands. Vusić, D., M. Plantak, I. Papa, A. Đuka, T. Pentek & T. Poršinsky	4. A New model for locating terminals optimally in reference to the resource base, terminal type and infrastructure. Berg, S. & D. Athanassiadis	4. Effects of soil clay content on rut formation. Mohtashami, S., L. Eliasson & E. Willén	4. Systematic review of efficiencies in comminuting of forest fuels. Bergstrom, D. & F. Di Fulvio
	5. The Profitability of Different Methods of Weed Control when Establishing Short Rotation Coppice in Organic Farming. Borchert, H., A. Winterling, F. Burger & K. Wiesinger	5 Direct versus via-terminal supply of forest residual biomasses: a simulation-based analysis. Fernández-Lacruz, R. , A. Eriksson & D. Bergström	5. Probability of damage to regeneration due to timber harvesting in thinned stands. Stańczykiewicz, A., D. Kulak, K. Leszczyński, J. M. Sowa & G. Szweczyk	5. Life cycle assessment of decentralized mobile production systems for pelletizing logging residues under Nordic conditions De la Fuente, T., D. Bergström, S. González-García, S. H. Larsson
	-----	6. Calibration of a handheld capacitance-based moisture meter for use in forest fuel supply management. Westerlund, L., D. Bergström & L. Fridh	6. Assessment of forest soil hydraulic parameters by infiltration experiments to measure compaction intensity of harvesting trails. Martin M., A. Chanzy, L. Lassabatère, N. Pousse, P. Ruch & S. Ruy.	-----
13:00-14:30	Lunch Break (Montes Building)			

14:30-16:30	Session D1 - [Room: F1 Seminary Hall, Forestales] Facing mountainous stands challenges to forest operations Moderator: Karl Stampfer	Session D2 - [Room: F0 Aula Magna, Forestales] New ICT tools for forest operational planning and control Moderator: Tomas Nördjfel	Session D3 - [Room: M0 Aula Magna, Montes Building] Global change, new challenges for forest operational planning Moderator: Raffaele Spinelli	Session D4 - [Room: M1 Degree Hall, Montes Building] Biofuels storage: quality and moisture Moderator: Imre Czupy
(6 x 20 min)	1. Winch-assist forwarders operating in British Columbia: productivity and tension monitoring. Mologni, O., P. Dyson, D. Amishev, R. Cavalli & S. Grigolato	1. Improved planning for silviculture and forestry engineering in cable crane operations with drone technology - precision analysis and validation of the suitability. Ziesak, M., P. Dietsch, M. Günter, J.-J. Thormann & C. Condrau.	1. Sustainability Impact Assessment of alternative thinning operations in Mediterranean umbrella pine plantations. Spinelli, R., N. Magagnotti, J. Schweier, B. Wolfslehner & M. Lexer	1. Influence of moisture content on oxygen consumption of wood chips – determination of the storage-stable moisture content. Hofmann, N., F. Schulmeyer, F. Burger, M. Riebler & H. Borchert
	2. Skyline tension monitoring of cable yarding systems in the Italian Alps. Mologni, O., A. R. Proto, G. Zimbalatti, K. Lyons & R. Cavalli	2. Sensor Technology for Volumetric Measurements of Truckloads. Acuña, M.	2. Manipulating work setting to reduce fuel consumption in CTL timber harvesting machines. Prinz, R., R. Spinelli, N. Magagnotti, J. Routa & A. Asikainen	2. Alternative preservation methods to minimize dry matter losses and to maintain fuel quality during wood chip storage. Lesche, S., T. Mendel, R. Mack, D. Kuptz & H. Hartmann
	3. Productivity, Setup Time and Costs of a Winch Assisted Forwarder. Holzfeind, T., K. Stampfer & F. Holzleitner	3. Use of large inventory data sets and remote sensing data to analyze stand structure parameter relevant for wood harvesting and forest operations. Bont, L., L. Ene & A. Hill	3. Modeling seasonal bearing capacity for production scheduling in Norway. Fjeld, D., J. Bjerketvedt & M. Fønhus	3. Meeting fuel specifications of ENplus wood chips by screening and drying of forest residues. Kuptz, D., K. Schreiber, F. Schulmeyer, T. Zeng, A. Pollex, V. Zeliński, M. Volgmann, H. Borchert & H. Hartmann
	4. Performance of gravitational cable yarding operations in steep-terrain group shelterwood silvicultural systems. Munteanu, C., M. Yoshida & S. A. Borz	4. First accuracy test of a novel mobile device based application for value-optimized bucking in motor-manual harvesting operations. G. Erber.	4. Mounding and mechanized planting for forest regeneration in changing climate conditions. Lazdina, D., K. Makovskis & A. Lazdins	4. Effect of screening on storage behaviour or wood chips. Mendel, T., D. Kuptz & H. Hartmann
	5. A new method to compute mechanical properties of a cable road skyline. Knobloch, C. & L. Bont	5. ForestMap: Quick and cost-effective integrated web platform for forest inventories. Garcia-Castillo, D., J. L. Tomé & A. Fernández-Landa.	5. The impact of weather conditions on fuel consumption of comminution and transport of wood raw material in Estonian conditions - a case study. Irdla, M., A. Padari & P. Muiste	5. Final customer experience linked to supply experience. Gestamp Biomass' experience, recommendations and requests to the community. Roca, L.
	-----	-----	6- Seasonality of wood supply operations in coastal Norway. Fjeld, D. & P. Lunde	6. The effects of coverage on logging residue moisture content after storage. Eliasson, L., H. von Hofsten, Ö. Grönlund
16:30-17:00	Coffee Break (Forestales Building)			
17:00-17:30	Plenary Session III - Keynote Speaker [Room: Aula Magna (Forestales Building)] FO			

(1x30 min)	Moderator: Eduardo Tolosana
	Forests, forest operations and climate change. Dr. Antti Asikainen , LUKE (Finland)
17:30-18:00	Closing Ceremony [Room: Aula Magna (Forestales Building)] F0. Welcome by:
	Head of the Organizing Committee of FORMEC 2018. Univ. Prof. Dr. Eduardo Tolosana
	FORMEC Permanent Organizing Committee. Dr. Christian Kanzian
	Head of the Organizing Committee of FORMEC 2019 Hungary. Univ. Prof. Dr. Imre Czupy
18:00-20:00	Free time
20:00-22:00	Conference dinner (Casa Narcisa. Paseo Castellana 254)
27.09.2018	Field trip
08:15-18:30	Field trip to forest operations in Segovia Province: Mechanized logging at mountainous conifer forest and in a mixed <i>Quercus</i> and <i>Pinus</i> stand on terraced terrain, shrub bundling demonstration and visit to firefighting base. Return to Madrid.