# List of publications
# Dr. Inge Jonckheere

## 1. Peer-reviewed articles and book chapters

Herold M., S. Carter, V. Avitabile, A. B. Espejo, I. Jonckheere, R. Lucas, R. E. McRoberts, E. Næsset, J. Nightingale, R. Petersen, J. Reiche, E. Romijn, A. Rosenqvist, D. M. A. Rozendaal, F. M. Seifert, M. J. Sanz and V. De Sy. 2019. The role and need for space-based forest biomass-related measurements in environmental management and policy. Surveys in Geophysics. In press.

S. Carter, M. Herold, C. Green, A. B. Espejo, I. Jonckheere, and S. Wilson. 2019. Capacity development for REDD+ MRV: impacts and lessons learned from a coordinated effort in the GFOI context. Carbon Management. In preparation.

Maniatis, D., J. Scriven, I. Jonckheere, J. Laughlin, K. Todd. 2019. Towards REDD+ Implementation. Annual Review of Environment and Resources. In preparation.

Jonckheere, I., Macfarlane, C. and Walter, J-M. N. 2017. Image Analysis of Hemispherical Photographs. Algorithms and calculations. *In*: "Hemispherical Photography in Forest Science: Theory, Methods, Applications", Edited by Prof. R. Fournier and R. Hall, University of Sherbrook, Canada, Publisher: Kluwer.

Fournier, R. A., D. Mailly, J.-M. N. Walter and I. Jonckheere. 2017. Acquiring Hemispherical Photographs in Forest Environments: From Planning to Archiving Photographs. *In*: "Hemispherical Photography in Forest Science: Theory, Methods, Applications", Edited by Prof. R. Fournier and R. Hall, University of Sherbrook, Canada, Publisher: Kluwer.

Bholanath P., C. Brack, D. Burgess, E. Cabrera, P. Caccetta, S. Eggleston, N. Fitzgerald, G. Foody, B. Raj Gautam, S. K. Gautam, A. Held, M. Herold, D. Hoekman, I. Jonckheere, *et al.* 2016. Integrating remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests Methods and Guidance from the Global Forest Observations Initiative. 10/2016; Edition: 2.0, Publisher: FAO, Rome, Italy. 228p.

Bholanath P., C. Brack, D. Burgess, E. Cabrera, P. Caccetta, S. Eggleston, N. Fitzgerald, G. Foody, B. Raj Gautam, S. K. Gautam, A. Held, M. Herold, D. Hoekman, I. Jonckheere, *et al.* 2014. Integrating remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests Methods and Guidance from the Global Forest Observations Initiative. 01/2013; Edition: 1.0, Publisher: Group on Earth Observations, Geneva, Switzerland. 163p.

Foody, G., F. Achard, A. Held, M. Herold, I. Jonckheere, J. Penman and M. Wulder. 2013. Satellites: ambition for forest initiative. *Nature*. 06/2013; 498. (SCI: 38.6)

Muscarella, B., M. Uriarte, J. Forero-Montaña, L. Comita, N. Swenson, J. Thompson, C. Nytch, I. Jonckheere, and J. K. Zimmerman. 2012. Life history trade-offs during the seed-to-seedling transition for tropical trees and lianas. *J. Ecology*. DOI: 10.1111/1365-2745.12027 (SCI: 5.43)

Tulyasuwan, N., M. Henry, M. Secrieru, I. Jonckheere, and S. Federici. 2012. Issues and challenges for the national system for greenhouse gas inventory in the context of REDD+. *Greenhouse Gas Measurement & Management*. 4: 1-11.

Shiels, A.B., J. Zimmerman, D. C. Garcia-Montiel, I. Jonckheere, J. Holm, D. Horton, and N. Brokaw. 2010. Plant responses to simulated hurricane damage in a subtropical wet forest, Puerto Rico. *J. Ecology*, 98: 659–673. (SCI: 5.43)

Comita L.S., J. Thompson, M. Uriarte, I. Jonckheere, C. D. Canham, and J. K. Zimmerman. 2010. Interactive effects of land use history and natural disturbance on seedling dynamics in a subtropical forest. *Ecological Applications*. 20: 1270-1284. (SCI: 3.470)

Uriarte, M., E. M. Bruna, P. Rubim, M. Anciães, and I. Jonckheere. 2009. Effects of forest fragmentation on the seedling recruitment of a tropical herb: assessing seed vs safe-site limitation. *Ecology*, 91(5), 1317–1328. (SCI: 5.18).

Comita L.S., M. Uriarte, J. Thompson, I. Jonckheere, C. D. Canham, and J. K. Zimmerman. 2009. Abiotic and biotic drivers of seedling survival in a hurricane-impacted tropical forest. *J. Ecology*, 97, 1346-1359. (SCI: 5.43)

Op de Beeck, M., B. Gielen, R. Samson, I. Jonckheere, I. A. Janssens, and R. Ceulemans. 2009. Needle age-related and seasonal photosynthetic capacity variation is negligible for modelling yearly gas exchange of a temperate Scots pine forest. *Biogeosciences Discuss.*, 6, 9737-9780. (SCI: 3.445)

Vanderzande, D., I. Jonckheere, J. Stuckens, W. Verstraeten and P. Coppin. 2008. Sampling Design of Ground-based LiDAR Measurements and its effect on Shadowing. *Can. J. For. Res*. Vol. 34, No. 6: 526-538. (SCI: 1.510)

Lhermitte, S., K. Nackaerts, I. Jonckheere, J. van Aardt, W. Verstraeten, and P. Coppin. 2008. Hierarchical image segmentation based on similarity of NDVI time-series. *Rem. Sens. Environ.* Vol. 112 (2): 506-521. (SCI: 5.10)

Verbesselt, J., Somers B., Lhermitte S., Jonckheere I., van Aardt J., and P. Coppin. 2007. Monitoring herbaceous fuel moisture content with SPOT VEGETATION time-series for fire risk prediction in savanna ecosystems. *Rem. Sens. Environ.* Vol.108 (4): 357-368. (SCI: 5.10)

Vanderzande, D., W. Hoet, I. Jonckheere, J. van Aardt, and P. Coppin. 2006. Influence of measuremental set-up of ground-based LiDAR on tree structure derivation. *Agr. For. Meteorol*. Vol. 141 (2-4): 147-160. (SCI: 4.118)

Verbesselt, J., S. Van der Linden, S. Lhermitte, I. Jonckheere, J. van Aardt and P. Coppin. 2006. Monitoring vegetation water content of grasslands and forest plantations to assess forest fire risk with satellite time-series. Forest Ecology and Management. Volume 234, Supplement 1, 15 November 2006, Page S25. (SCI: 2.77)

Verbesselt, J., Jönsson P., Lhermitte S.; Jonckheere I., van Aardt J., and P. Coppin. 2006. Relating time-series of meteorological and remote sensing indices by extraction of seasonality metrics to monitor vegetation moisture dynamics. Book: "Signal and Image Processing for Remote Sensing", Edited by Prof. C.H. Chen, University of Massachusetts Dartmouth, Publisher: CRC Press. pp. 153-172.

Jonckheere, I., K. Nackaerts, J. van Aardt, B. Muys, and P. Coppin. 2006. The relevance of fractal dimension for foliage distribution quantification in forest canopies: a model approach. *Ecol. Modell*., Vol. 197(1-2): 179-195. (SCI: 1.652)

Verbesselt J., B. Somers, S. Lhermitte, J. van Aardt, I. Jonckheere, and P. Coppin. 2006. Monitoring herbaceous biomass and water content with SPOT VEGETATION time-series to improve fire risk assessment in savanna ecosystems. *Rem. Sens. Environ.*, Vol. 101 (3): 399-414. (SCI: 5.10).

Lhermitte, S., J. Verbesselt, I. Jonckheere, J. Van Aardt, and P. Coppin. 2005. Eco-climatic image segmentation based on time series. *Communications in agricultural and applied biological sciences* 02/2005; 70(2):165-8.

Verbesselt, J., B. Somers, S. Lhermitte, J. van Aardt, I. Jonckheere and P. Coppin. 2005. Fire risk assessment in savanna ecosystems with multi-temporal satellite data. *Communications in agricultural and applied biological sciences* 02/2005; 70(2): 23-6.

Jonckheere, I., B. Muys, and P. Coppin. 2005. Derivative analysis for *in situ* high-dynamic range hemispherical photography and its application in forest stands. *IEEE Geosci. and Remote Sensing Lett*. Vol. 2 (3): 296-300. (SCI: 2.642)

Jonckheere, I., B. Muys, and P. Coppin. 2005. Allometry and evaluation of in situ optical LAI determination in Scots pine: a case-study in Belgium. *Tree Physiol*., Vol. 25 (6): 723-732. (SCI: 2.462)

Jonckheere, I., B. Muys, and P. Coppin. 2005. Assessment of automatic gap fraction estimation of forests from digital hemispherical photography. *Agr. For. Meteorol*. Vol. 132 (1-2): 96-114. (SCI: 4.118)

Jonckheere, I., B. Muys and P. Coppin. 2004. Optimalization of in-situ LAI determination by means of hemispherical photography. *Communications in agricultural and applied biological sciences* 02/2004; 69(2):19-22.

Jonckheere, I., S. Fleck, K. Nackaerts, B. Muys, P. Coppin, M. Weiss, and F. Baret. 2004. Review of Methods for in situ LAI Determination, Part I: Theories, sensors and hemispherical photography. *Agr. For. Meteorol.*, Vol. 121 (1-2): 19-35. (SCI: 4.118)

**Most downloaded paper for AFM in 2004 -Top-10 most cited paper for AFM in 2001-2005**

Weiss, M., F. Baret, G. J. Smith, I. Jonckheere, and P. Coppin. 2004. Review of Methods for in situ LAI Determination, Part II: Estimation of LAI, errors and sampling. *Agr. For. Meteorol*., Vol. 121 (1-2): 36-53. (SCI: 4.118)

Coppin, P., I. Jonckheere, E. Lambin, K. Nackaerts, and B. Muys, 2004. Methods in Natural Ecosystem Monitoring: A Review. *Int. J. Rem. Sens*., 25 (9): 1565-1596.

## 2. Conference Proceedings

D'Annunzio, R., I. Jonckheere, A. Ortmann and A. Gianvenuti. 2018. Combined S1-S2 data analysis for wood fuel biomass estimation in refugee camp of Bidibidi, Uganda. ESA 2nd Sentinel-2 Validation Team meeting, 29-31 January, Frascati, Italy.

Yasmin, N., R. D'annunzio and I. Jonckheere. 2017. Forest degradation assessment: accuracy assessment of forest degradation products using HR data. Worldcover 2017 conference, 14-16 March, Frascati, Italy.

Jonckheere, I. 2016. Challenges to feed the world and the use of remote sensing. ESA Living Planet Symposium, 9-13 May, Prague, Czech Republic.

Vollrath, A., E. Lindquist, I. Jonckheere and A. Pekkarinen. 2016. Open Foris SAR Toolkit-Free and Open Source Command Line Utilities for Automatized SAR Data Pre-Processing. ESA Living Planet Symposium, 9-13 May, Prague, Czech Republic.

Jonckheere, I. 2015. National forest monitoring systems for REDD+. American Geosciences Union Annual (AGU) Fall Meeting, 14-18 December, San Francisco, USA.

Boschetti, L., Mollicone, D., Jonckheere, I. Humber, M. 2014. REDD+ and wild land fires: the contribution of satellite observation systems. Fire is a complex biophysical process with multiple direct and indirect effects on the atmosphere. IUFRO, 5-11 October, Salt Lake City, USA.

Jonckheere, I., 2012. The role of RS/GIS applications for National Forest Monitoring Systems in the context of REDD+. American Geosciences Union Annual (AGU) Fall Meeting, 3-7 December, San Francisco, USA.

Jonckheere, I. 2012. The role of satellite data for the National Forest Monitoring systems in the context of REDD+. Proceedings of the 1st EARSeL Workshop on Temporal Analysis of Satellite Images, 23– 25 May, Mykonos, Greece. 4p.

Jonckheere, I. 2012. National forest monitoring systems for REDD+. Proceedings of Sentinel-2 Preparatory Symposium, 23-27 April, ESA/ESRIN, Frascati, Italy. 6 p.

Jonckheere, I., 2011. The start-up phase of the national satellite forest monitoring systems for DRC and PNG: a joint venture between FAO and INPE. American Geosciences Union Annual (AGU) Fall Meeting, 5-9 December, San Francisco, USA.

Shiels, A., J. K. Zimmerman, D. C. Garcia-Montiel, I. Jonckheere, J. A. Holm, D. Horton and N. Brokaw. 2011. Vegetation dynamics after large-scale artificial canopy opening and detritus deposition in a tropical forest in Puerto Rico. In: Proceedings of the 96th American Ecological Association (ESA) Annual Meeting, Austin, 7-12

August, Texas, USA.

Šimpraga M., Verbeeck H., Heinesch B., Soubie R., Jonckheere I., Laffineur Q., Aubinet M., Vincke C.,Steppe K. 2011. Seasonal variation of LAI in the footprint of a flux measurement tower. Studiedag Starters in Bosonderzoek, 17 March 2011, Brussels.

Jonckheere, I., D. Maniatis, and D. Mollicone. 2011. Misrepresenting REDD+ to promote specific technological RS options. European Geosciences Union Annual General Assembly, 3-8 April, Vienna, Austria.

Tulyasuwan, N., S. Federici, M. Secrieru, I. Jonckheere and M. Henry (Eds.) 2011.Proceedings of the training workshop on the National System for Greenhouse Gas Inventory in the context of REDD+, 25-28 January, Rome, Italy. MRV Working paper 9- FAO. 96p.

Jonckheere, I. 2010. FAO UN-REDD- INPE Joint Programme on Forest Monitoring Systems based on RS and GIS techniques. American Geosciences Union (AGU) Annual Fall Meeting, 13-17 December, San Francisco, USA.

Jonckheere, I., C. Gerardin, D. Maniatis, R. Roman-Cuesta, M. Henry and D.Mollicone. 2010. The role of satellite remote sensing in REDD/MRV. European Geosciences, Union Annual General Assembly, 2-7 May, Vienna, Austria.

Jonckheere, I., Comita, L., Uriarte, M., Coppin, P., Zimmerman, and J., Thompson. 2009. Impact of hurricanes on light regime and biomass in tropic forest ecosystems: Puerto Rico as showcase. WFC 2009 - Forest in Development, a Vital Balance. World Forestry Congress, 18-23 October, Buenos Aires, Argentina, 4p.

Comita, M. Uriarte, J. Thompson, I. Jonckheere, and J. K. Zimmerman. 2009. Abiotic and biotic drivers of seedling survival in a hurricane-impacted tropical forest. *In*: Proceedings of the 94th American Ecological Association (ESA) Annual Meeting, 2-7 August, Albuquerque, New Mexico.

Uriarte, M., E. Bruna, P. Rubim, M. Anciaes, and I. Jonckheere. 2009. Recruitment limitation for a tropical forest understory herb in a human-modified Amazonian landscape. *In*: Proceedings of the the 94th American Ecological Association (ESA) Annual Meeting, 2-7 August, Albuquerque, New Mexico.

Jonckheere, I. and P. Coppin. 2009. Assessment of the impact of hurricanes on light regime and biomass in tropical forest ecosystems: a Puerto Rico case study. *In*: Proceedings of 33rd International Symposium of Remote Sensing "Sustaining the Millenium Development Goals", 4-8 May, Stresa, Italy, 4p.

Jonckheere, I., L.S. Comita, J. Thomson, J. Zimmerman M. Uriarte , and P. Coppin, 2009. Exploration of in-situ light and biomass estimation by digital hemispherical photography in tropical forests. European Geosciences Union Annual General Assembly, 19-24 April, Vienna, Austria.

Jonckheere, I., L.S. Comita, M. Uriarte, J. Thomson, J. Zimmerman, and P. Coppin, 2009. Potentials and limits of biomass and light regime estimation in tropical forest ecosystems by means of hemispherical photography: a case study in Puerto Rico. *In*: Proceedings of 6th EARSeL SIG IS workshop, 16-19 March, Tel-Aviv, Israel.

Jonckheere, I. and P. Coppin. 2008. Close-range remote sensing for cultural heritage: The potential of digital high-dynamic range digital hemispherical photography. *In*: Proceedings of 1st International Workshop of "Advantages of Remote Sensing in Archaeology and the management of Cultural Heritage", 30 Sept- 4 Oct., Rome, Italy.

Van der Zande, D., I. Jonckheere, J. Stuckens, W. Verstraeten and P. Coppin. 2008. Impact of the sampling design on the quality of ground-based LiDAR datasets. *In*: Proceedings of Silvilaser, 8th International Conference on LiDAR applications in forest assessment and inventory, 17-20 Sept, Edinburgh, UK.

Jonckheere, I., and P. Coppin. 2007. Structural description of forest canopies: status and perspectives for close-range remote sensing. *In*: Proceedings of the 32nd International Symposium of Remote Sensing "Sustainable development through global earth applications", 25-29 June, San Jose, Costa Rica, 4p.

Jonckheere, I. 2007. The potential of digital high-resolution and high-dynamic range hemispherical photography for globe restoration purposes. 2nd COST Strategic Workshop "Past-Present-Prediction- about simulation techniques, dosimeters, sensors in conservation research and application", 30 May-2 June, Ohrid, FYR of Macedonia, 4p.

Jonckheere, I., D. Vanderzande, and P. Coppin. 2006. In situ LAI determination in forest stands: from 2-D to 3-D. *In*: Proceedings of the EARSel Workshop 3D Remote Sensing in Forestry, 14-15 February, Vienna, Austria, pp. 280-283.

Van Aardt, J., I. Jonckheere, P. Coppin. 2005. Integration of in-situ data and hyperspectral remote sensing for plant production modeling: potential and status of the IS-HS project. ISHS-Benelux Symposium, 16 December, Leuven, België.

Jonckheere, I., B. Muys, P. Coppin. 2005. Towards a standard in optical in situ LAI estimation in forest stands. *In*: Proceedings of the 12th SPIE International Symposium on Remote Sensing, Vol. 5976, Remote Sensing for Agriculture, Ecosystems, and Hydrology VII; Manfred Owe, Guido D'Urso; Eds.,19-22 September, Brugge, Belgium, p. 303-313

Verbesselt, J., B. Somers, S. Lhermitte, J. Van Aardt, I. Jonckheere, P. Coppin. 2005. Estimating vegetation dryness by remotely sensed data to monitor fire risk. *In*: Proceedings of the 12th SPIE International Symposium on Remote Sensing, Vol. 5976, Remote Sensing for Agriculture, Ecosystems, and Hydrology VII; Manfred Owe, Guido D'Urso; Eds., 19-22 September, Brugge, Belgium, p. 90-98

Lhermitte, S., M. Tips, I. Jonckheere, J. Van Aardt, P. Coppin. 2005. Development of indicators of vegetation recovery based on time series analysis of SPOT Vegetation

data. *In*: Proceedings of the 12th SPIE International Symposium on Remote Sensing, Vol. 5976, Remote Sensing for Agriculture, Ecosystems, and Hydrology VII; Manfred Owe, Guido D'Urso; Eds., 19-22 September, Brugge, Belgium, p. 99-108

Jonckheere, I., B. Muys, P. Coppin. 2005. Towards a standard for optical in situ LAI determination in forest stands. *In*: Proceedings of IGARSS05, 25-29 July, Seoul, Korea, 4p.

Jonckheere, I., B. Muys, P. Coppin. 2004. Optimalisation of in-situ LAI determination by means of forest stand models. *In*: Proceedings of International Conference on Modelling Forest Production, 19-23 April, Vienna, Austria, p. 184-188.

Jonckheere, I., B. Muys, P. Coppin. 2003. Assessing allometric relations for estimating leaf area of Scots pine trees and stands. 9th PhD symposium on Applied Biological Sciences, FLTBW, Universiteitshallen, Leuven, 16 Oct.. In Communications in Agricultural and Applied Biological Sciences, 68(3): 165-168.

Jonckheere, I., B. Muys, P. Coppin. 2004. Optimization of in-situ LAI determination by means of hemispherical photography. 10th PhD symposium on Applied Biological Sciences', FABSE, Het Pand, Ghent, 29 September. *In*: Communications in Agricultural and Applied Biological Sciences, 69(2): 19-22.

Jonckheere, I. S. Fleck, B. Muys, P. Coppin. 2003. Optical in situ LAI estimation Focused on hemispherical photography. *In*: Proceedings of the XIV World Forestry Congress, 21-25 September, Québec, Canada, Vol. B- Forests for the planet, p.51.

Coppin, P., Jonckheere, E. Lambin, B. Muys. 2002. Digital change detection methods in natural ecosystem monitoring: a review. *In*: Proceedings of the First International Workshop on the Analysis of Multi-temporal Remote Sensing Images MULTITEMP-2001, 13-14 September, Trento, Italy, p. 3-36.

Jonckheere, I., S. Fleck, B. Muys, P. Coppin. 2002. Determination of leaf area index in forest stands based on hemispherical photography by means of the Kodak DCS 6660 digital camera. *In*: Proceedings of the 29th International Symposium on Remote Sensing of Environment, 8-10 April, Buenos Aires, Argentina, 4 p. (CD).

### 3. Non peer-reviewed publications

Jonckheere, I. 2004. Het gebruik van een digitale camera in het bos, meer dan alleen mooie natuurfoto's maken (In Dutch). De Bosrevue, Vol. 3 (10): 10-13.

Jonckheere, I. 2004. Digitale camera's, een handig hulpmiddel in standplaats geschiktheidsbepaling (In Dutch). Sylva Belgica, Vol.111 (6): 40-41.

## 4. Thesises

Jonckheere, I., 2005. Consistent determination of LAI and quantification of foliage distribution in forest canopies based on digital hemispherical photography. PhD dissertation, Katholieke Universiteit Leuven, Faculty of Applied Bioscience and engineering, 250p.

Jonckheere, I., 2000. Relevantie van textuurparameters in remote sensing toepassingen bij hoge ruimtelijke resolutie. (In Dutch). M.Sc. Dissertation, Katholieke Universiteit Leuven, Faculty of Applied Bioscience and engineering, 59p.

## 5. Reports

Begumana, J., L. D'Aietti, A. Gianvenuti, I. Jonckheere, E. Kintu, E. Lindquist, R. Tavani, and Z. Xia. 2018. Rapid Assessment of Natural Resources Degradation in Areas Impacted by the South Sudan Refugee Influx in Northern Uganda. Rome, Food and Agriculture Organization of the United Nations (FAO).

Gianvenuti, A., Farah, I., Yasmin, N., Jonckheere, I. and Xia, Z. 2018. Using Prosopis as an energy source for refugees and host communities in Djibouti, and controlling its rapid spread. Rome, Food and Agriculture Organization of the United Nations (FAO).

FAO. 2018. Building resilience through SAFE Access to Fuel and Energy (SAFE). Moving towards a comprehensive SAFE Framework. Rome, Food and Agriculture Organization of the United Nations (FAO).

FAO. 2017. From reference levels to results reporting: REDD+ under the UNFCCC. Rome, Food and Agriculture Organization of the United Nations (FAO).

FAO & UNHCR. 2017. Rapid wood fuel assessment: baseline for the Bidibidi settlement, Uganda. Rome, Food and Agriculture Organization of the United Nations (FAO).