

Curriculum Vitae
Anatoly Abraham Gitelson, Ph.D.
agitelson2@unl.edu, (1) 240 205 5540

EDUCATION AND TRAINING:

Ph.D.	-	The Institute of Radio Technology, Taganrog, USSR	1972
M.S.	-	The Institute of Radio Technology, Taganrog, USSR	1964

PROFESSIONAL EXPERIENCE:

2014-date	<i>Professor Emeritus</i> , School of Natural Resources, University of Nebraska-Lincoln.
2012-2020	<i>Visiting professor</i> , Israel Institute of Technology (Technion).
2014-2016	<i>Marie Curie International Incoming Visiting Professor</i> , Israel Institute of Technology (Technion).
2000-2014	<i>Professor</i> , School of Natural Resources, University of Nebraska-Lincoln.
1997-2000	<i>Head</i> , Department for Environmental Physics and Energy Research, J. Blaustein Institute for Desert Research, Ben-Gurion University of the Negev.
1992-2000	<i>Professor</i> , Department of Geological and Environmental Sciences, Ben-Gurion University of the Negev.
1990-2000	<i>Senior scientist</i> , Remote Sensing Laboratory, J. Blaustein Institute for Desert Research, Ben-Gurion University of the Negev.
1981-1989	<i>Head</i> , Remote Sensing Lab, Hydrochemical Institute, Environmental Protection Agency, Rostov-on-Don, USSR.
1977-1981	<i>Senior scientist</i> , Institute for Nuclear Research, Academy of Sciences, USSR, Moscow, USSR.
1973-1977	<i>Senior scientist, head</i> , Laboratory for Solid State Electronics, Physical Institute, Rostov-on-Don State University, USSR.
1964-1972	<i>Scientist</i> , Institute for Microwave Electronics, Krasnodar, USSR.

RESEARCH INTERESTS:

Radiative transfer in vegetation, water and atmosphere, remote sensing of terrestrial and aquatic environment.

TEACHING ACTIVITY:

Introduction to remote sensing, Remote sensing of environment, Quantitative remote sensing, among others.

AWARDS, HONORS, RESEARCH FELLOWSHIPS

1977	USSR Academy of Sciences - best work of the year in Solid State Physics: Physical properties of thin ferroelectric films. <i>Solid State Physics</i> , 1977- Vol. 19, No. 6, pp. 1556-1560; Vol. 19, No. 7, pp.1913-1919.
1981	USSR Academy of Sciences - best work of the year in Physics of High Energy Particles: Lower limit on the proton lifetime according to data from the Baksan underground telescope. <i>American Inst. of Physics</i> , 0021-0/81/120651-3.
1996	DAAD, German Academy of Sciences Fellowship, University of Karlsruhe.
1998	Israeli State Award "For Outstanding Contribution to Israeli Science", to 50th Israel Anniversary, Israeli Ministry of Science and Technology, Israeli Ministry of Absorption.
2014	Marie Curie Incoming International Fellowship, European Commission.

MENTORED GRADUATE STUDENTS

Major Professor & Dissertation Advisor: 23 Ph.D. and 20 M.S. completed.

Recently completed dissertations at UNL:

- Tarlan Razzaghi, Ph.D., 2016. Quantifying variability of surface reflectance and estimating canopy chlorophyll content and green biomass using hyperspectral close range data and airborne

imagery.

- Anthony Lawrence Nguy-Robertson, Ph.D., 2013. Remote Sensing of green Leaf Area Index in Maize and Soybean: From Close Range to Satellites.
- Daniela Gurlin, Ph.D., 2012. Remote estimation of phytoplankton chlorophyll-a in inland, estuarine and coastal waters.
- Yi Peng, Ph.D., 2012. Estimation of gross primary production in crops: from close range to satellites.
- Arthur I. Zygielbaum, Ph.D., 2009. Detection and Measurement of Water Stress in Vegetation Using Visible Spectrum Reflectance
- Wesley J. Moses, Ph.D., 2009. Satellite-Based Estimation of Chlorophyll-a Concentration in Turbid Productive Waters.
- Giorgio Dall'Olmo, Ph.D., 2006. Isolation of Optical Signatures of Phytoplankton Pigments in Turbid Productive Waters: Remote Assessment of Chlorophyll-a.
- Veronica Ciganda, Ph. D., 2006. Distribution of Chlorophyll in Maize Canopy: Technique, Quantification, and Implications for Remote Sensing
- Andres Vina, Ph.D., 2004. Remote Estimation of Leaf Area Index and Biomass in Crops.

RESEARCH GRANTS (PAST FIVE YEARS):

- 2014-2016, MARIE CURIE ACTIONS, Incoming International Fellowships, European Commission, Remote Estimating Vegetation Health, 300,000 EUR.

PUBLICATIONS (since 1990) <http://calmit.unl.edu/people/agitelson2>

Gitelson, A. A., Viña, A., Solovchenko, A. 2025. Spectral response of gross primary production to in situ canopy light absorption coefficient of chlorophyll, *Photosynthesis Research* 163:20 <https://doi.org/10.1007/s11120-025-01142-9>

Gitelson, A.A., Zygielbaum, A.I., Arkebauer, T.J., Walter-Shea, E.A., Solovchenko, A. 2024. Stress detection in vegetation based on remotely sensed light absorption coefficient, *International Journal of Remote Sensing* 45/1, 259–277 <https://doi.org/10.1080/01431161.2023.2295837>

Lehmann, M. K. et al. 2023. GLORIA - A globally representative hyperspectral in situ dataset for optical sensing of water quality, *Scientific Data* 10:100 <https://doi.org/10.1038/s41597-023-01973-y>

Peng Y., Solovchenko A., Zhang C., Shurygin B., Liu X., Wu X., Gong Y., Fang S., Gitelson A., 2023. Remote sensing of rice phenology and physiology via absorption coefficient derived from unmanned aerial vehicle imaging, *Precision Agriculture*, <https://doi.org/10.1007/s11119-023-10068-y>; Online version contains supplementary material available at <https://doi.org/10.1007/s11119-023-10068-y>

Gitelson, A., Viña, A., Inoue, Y., Arkebauer, T., Schlemmer, M., Schepers, J. 2022. Uncertainty in the Evaluation of Photosynthetic Canopy Traits Using the Green Leaf Area Index. *Agricultural and Forest Meteorology*, 320, 108955, <https://doi.org/10.1016/j.agrformet.2022.108955>

Gitelson, A., Arkebauer, T., Solovchenko, A., Nguy-Robertson, A., Inoue, Y. 2022. An insight into spectral composition of light available for photosynthesis via remotely assessed absorption coefficient at leaf and canopy levels. *Photosynthesis Research*, <https://doi.org/10.1007/s11120-021-00863-x>

Solovchenko, A., Lukyanov, A., Nikolenko, A., Shurygin, B., Akimov, M. and Gitelson, A. 2021. Physiological foundations of spectral imaging-based monitoring of apple fruit ripening. *Acta Hort.* 1314, 419-428. <https://doi.org/10.17660/ActaHortic.2021.1314.52>

Gutman, G., Skakun, S., Gitelson, A. 2021. Revisiting the use of red and near-infrared reflectances in vegetation studies and numerical climate models, *Science of Remote Sensing*, 4, 100025, <https://doi.org/10.1016/j.srs.2021.100025>

Gitelson, A., Arkebauer, T., Viña, A., Skakun, S., Inoue, Y. 2021. Evaluating plant photosynthetic traits via absorption coefficient in the photosynthetically active radiation region, *Remote Sensing of Environment*, 258, 112401, <https://doi.org/10.1016/j.rse.2021.112401>

Wang, H., Gitelson, A., Sprintsin, M., Rotenberg, E., and Yakir, D. 2020. Ecophysiological adjustments of a pine forest to enhance early spring activity in hot and dry climate, *Environ. Res. Lett.* 15 114054, <https://doi.org/10.1088/1748-9326/abc2f9>

Gitelson, A. Solovchenko, A., Viña, A. 2020. Foliar absorption coefficient derived from reflectance spectra: A gauge of the efficiency of in situ light-capture by different pigment groups, *Journal of Plant Physiology*, 254, 153277, <https://doi.org/10.1016/j.jplph.2020.153277>

Gitelson, A. 2020. Towards a generic approach to remote non-invasive estimation of foliar carotenoid-to-chlorophyll ratio, *Journal of Plant Physiology*, 252, 153227 <https://doi.org/10.1016/j.jplph.2020.153227>

Gilberto Pastorello et al. 2020. The FLUXNET2015 dataset and the ONEFlux processing pipeline for eddy covariance data. *Scientific Data*, 7: 225, <https://doi.org/10.1038/s41597-020-0534-3>

Peng, Y., Kira, O., Nguy-Robertson, A., Suyker, A., Arkebauer, T., Sun, Y., and Gitelson, A.A. 2019. Gross Primary Production Estimation in Crops Using Solely Remotely Sensed Data, *Agron. J.* 111, 1–10, <https://doi.org/10.2134/agronj2019.05.0332>

Gitelson, A., Viña, A., Solovchenko, A., Arkebauer, T., Inoue, Y. 2019. Derivation of canopy light absorption coefficient from reflectance spectra, *Remote Sensing of Environment*, 231, 111236, <https://doi.org/10.1016/j.rse.2019.111276>

Moses, W.J., Saprygin, V., Gerasyuk, V., Povazhnyy, V., Sergey Berdnikov, S., and Gitelson, A.A. 2019. OLCI-Based NIR-red Models for Estimating Chlorophyll-a Concentration in Productive Coastal Waters – A Preliminary Evaluation, *Environmental Research Communications*, 1, 011002, <https://doi.org/10.1088/2515-7620/aaf53c>

Gitelson, A.A., 2019. Remote estimation of fraction of radiation absorbed by photosynthetically active vegetation: generic algorithm for maize and soybean, *Remote Sensing Letters*, 10, 283-291, <https://doi.org/10.1080/2150704X.2018.1547445>

Gitelson, A., Viña, A., Solovchenko, A., Arkebauer, T., Inoue, Y. 2019. Derivation of canopy light absorption coefficient from reflectance spectra, *Remote Sensing of Environment*, 231, 111236, <https://doi.org/10.1016/j.rse.2019.111276>

Hank, T.B., Berger, K., Bach, H., Clevers, J.G.P.W., Gitelson, A., Zarco-Tejada, P., and Mauser, W. 2018. Spaceborne Imaging Spectroscopy for Sustainable Agriculture: Contributions and Challenges, *Surveys in Geophysics*, <https://doi.org/10.1007/s10712-018-9492-0>

Gitelson, A.A., and A. Solovchenko. 2018. Non-invasive Quantification of Foliar Pigments: Principles and Implementation. *Hyperspectral Remote Sensing of Vegetation*, Second Edition, (Thenkabail, P.S., Lyon, J.G., Huete, A., Eds), Chapter 5, Vol. II, pp. 135-162. CRC Press- Taylor and Francis group, Boca Raton, London, New York.

Gitelson, A.A., 2018. Recent Developments in Remote Estimation of Crop Biophysical and Biochemical Properties at Various Scales, *Hyperspectral Remote Sensing of Vegetation*, (Thenkabail, P.S., Lyon, J.G., Huete, A., Eds), Chapter 1, Vol. III, pp. 3-24. CRC Press- Taylor and Francis group, Boca Raton, London, New York.

Gitelson, A.A., Arkebauer, T.J., Suyker, A.E., 2018. Convergence of daily light use efficiency in irrigated and rainfed C3 and C4 crops, *Remote Sensing of Environment*, 217, 30-37, <https://doi.org/10.1016/j.rse.2018.08.007>

Gitelson, A., A. Solovchenko. 2018. Non-invasive quantification of foliar pigments: Possibilities and limitations of reflectance- and absorbance-based approaches, *Journal of Photochemistry and Photobiology B: Biology*, Vol. 178: 537-544 <https://doi.org/10.1016/j.jphotobiol.2017.11.023>

Gitelson, A., & Solovchenko, A. 2017. Generic algorithms for estimating foliar pigment content. *Geophysical Research Letters*, 44. <https://doi.org/10.1002/2017GL074799>

Kira, O, Nguy-Robertson, A L., Arkebauer, T. J., Linker, R., and Gitelson, A.A. (2017). Toward Generic Models for Green LAI Estimation in Maize and Soybean: Satellite Observations, *Remote Sensing*, 9, 318; doi:10.3390/rs9040318

Féret, J.-B., Gitelson, A.A., Noble, S.D., S. Jacquemoud, S. (2017). PROSPECT-D: towards modeling leaf optical properties through a complete lifecycle, *Remote Sensing of Environment*, 193, 204–215, <http://dx.doi.org/10.1016/j.rse.2017.03.004>

Peng, Y., Nguy-Robertson, A., Arkebauer, T., Gitelson, A.A. (2017). Assessment of Canopy Chlorophyll Content Retrieval in Maize and Soybean: Implications of Hysteresis on the Development of Generic Algorithms, *Remote Sens.* 9, 226; doi:10.3390/rs9030226.

Gitelson, A.A., Gamon. J.A., Solovchenko. A. (2017). Multiple drivers of seasonal change in PRI: Implications for photosynthesis 1. Leaf level, *Remote Sensing of Environment* 191, 110–116, <http://dx.doi.org/10.1016/j.rse.2016.12.014>

Gitelson, A.A., Gamon. J.A., Solovchenko. A. (2017). Multiple drivers of seasonal change in PRI: Implications for photosynthesis 2. Stand level, *Remote Sensing of Environment* 190, 198–206, <http://dx.doi.org/10.1016/j.rse.2016.12.015>

Gitelson, A., Chivkunova, O., Zhigalova, T., Solovchenko, A. (2017). In situ optical properties of foliar flavonoids: implication for non-destructive estimation of flavonoid content, *Journal of Plant Physiology* 218, 258–264. <https://authors.elsevier.com/a/1Viu2e3V0bJGE>

Bio-optical Modeling and Remote Sensing of Inland Waters, (2017). Edited by Mishra, D. R. Ogashawara, I., and Gitelson, A.A., Elsevier Inc.

https://books.google.com/books?id=jgNQCwAAQBAJ&printsec=frontcover&hl=pt-BR&source=gbg_summary_r&cad=0#v=onepage&q&f=false

Ogashawara, I., Mishra, D. R. and Gitelson, A.A., Remote Sensing of Inland Waters: Background and Current State-of-the-Art. (2017). *Bio-optical Modeling and Remote Sensing of Inland Waters*, Edited by Mishra, D. R. Ogashawara, I., and Gitelson, A.A., Chapter 1, pp. 1-24, Elsevier Inc.

Gitelson, A., & Solovchenko, A. (2017). Generic algorithms for estimating foliar pigment content. *Geophysical Research Letters*, 44. <https://doi.org/10.1002/2017GL074799>

Spyrakos, E; O'Donnell, R; Hunter, P; Miller, C; Scott, M; Simis, SGH; Neil, C; Barbosa, CCF; Binding, CE; Bradt, S; Bresciani, M; Dall'Olmo, GD; Giardino, C; Gitelson, AA; Kutser, T; Li, Lin; Matsushita, B; Martinez Vicente, V; Matthew, MW; Ogashawara, I; Ruiz-Verdu, A; Schalles, JF; Tebbs, E; Zhang, Y; Tyler, AN. 2017 Optical types of inland and coastal waters. *Limnology and Oceanography*. 63, 846–870, doi: 10.1002/lno.10674

Inoue, Y., Guerif, M, Baret, F., Skidmore, A., Gitelson, A., Schlerf, M., Oliso, A. (2016). Simple and robust methods for remote sensing of canopy chlorophyll content: a comparative analysis of hyperspectral data for different types of vegetation, *Plant, Cell and Environment*, 39, 2609-2623 DOI: 10.1111/pce.12815.

Verrelst, J., Rivera, J.P., Gitelson, A., Delegido, J., Moreno, J., Camps-Valls, G. (2016). Spectral band selection for vegetation properties retrieval using Gaussian processes regression, *International Journal of Applied Earth Observation and Geoinformation*, 52, 554–567, <http://dx.doi.org/10.1016/j.jag.2016.07.016>

Gitelson, A. A., Peng, Y., Vina, A., Arkebauer, T., Schepers, J. S. (2016). Efficiency of chlorophyll in gross primary productivity: A proof of concept and application in crops. *Journal of*

Plant Physiology, 201, 101–110, <http://dx.doi.org/10.1016/j.jplph.2016.05.019>

Kira, O., A. L. Nguy-Robertson, T. J. Arkebauer, R. Linker, A. A. Gitelson. (2016). Informative spectral bands for remote green LAI estimation in C3 and C4 crops, *Agricultural and Forest Meteorology*, 218-219, 243-249, <http://dx.doi.org/10.1016/j.agrformet.2015.12.064>

Ghosh, S., D. R. Mishra, A. A. Gitelson. (2016). Long-term monitoring of biophysical characteristics of tidal wetlands in the northern Gulf of Mexico — A methodological approach using MODIS, *Remote Sensing of Environment*, 173, 39–58, doi:10.1016/j.rse.2015.11.015

Nguy-Robertson, A., Y. Peng, T. Arkebauer, D. Scoby, J. Schepers & A. Gitelson. (2015). Using a Simple Leaf Color Chart to Estimate Leaf and Canopy Chlorophyll a Content in Maize (*Zea mays*), *Communications in Soil Science and Plant Analysis*, <http://dx.doi.org/10.1080/00103624.2015.1093639>

Houborg, R., M. McCabe, A. Cescatti, and A. Gitelson. (2015). Leaf chlorophyll constraint on model simulated Gross Primary Productivity in agricultural systems, *Int. J. Appl. Earth Observ. Geoinf.* 43, 160-176, <http://dx.doi.org/10.1016/j.jag.2015.03.016>

Nguy-Robertson, A.L., A.A. Gitelson. (2015). Algorithms for estimating green leaf area index in C3 and C4 crops for MODIS, Landsat TM/ETM+, MERIS, Sentinel MSI/OLCI, and Venus sensors *Remote Sensing Letters*, 6(5), 360-369, <http://dx.doi.org/10.1080/2150704X.2015.1034888>

Yacobi, Y.Z., J. Köhler, F. Leunert, A. Gitelson. (2015). Phycocyanin specific absorption coefficient: eliminating the effect of chlorophylls absorption, *Limnology & Oceanography: Methods* 13, 2015, 157-168, <http://dx.doi.org/10.1002/lom3.10015>

Gitelson, A. A., Y. Peng, D.C. Rundquist, A. Suyker, S.B. Verma. (2015). Remote estimation of gross primary productivity in maize and soybean: from close range to satellites, *Precision Agriculture'15*, (J. V. Stafford Ed.), Wageningen Academic Publishers, The Netherlands, pp. 183-190, 2015, http://dx.doi.org/10.3920/978-90-8686-814-8_22.

Schull, M. A., M. C. Anderson, R. Houborg, A. Gitelson, and W. P. Kustas. (2015). Thermal-based modeling of coupled carbon, water and energy fluxes using nominal light use efficiencies constrained by leaf chlorophyll observations, *Biogeosciences*, 12, 1511–1523. www.biogeosciences.net/12/1511/2015/; <http://dx.doi.org/doi:10.5194/bg-12-1511-2015>

Gitelson, A.A., Y. Peng, T.J. Arkebauer, A.E. Suyker. (2015). Productivity, absorbed photosynthetically active radiation, and light use efficiency in crops: Implications for remote sensing of crop primary production, *Journal of Plant Physiology*, 177, 100–109, <http://dx.doi.org/10.1016/j.jplph.2014.12.015>

Kira, O., R. Linker, A. Gitelson. (2015). Non-destructive estimation of foliar chlorophyll and carotenoid contents: Focus on informative spectral bands, *International Journal of Applied Earth Observation and Geoinformation*, 38, 251–260, <http://dx.doi.org/10.1016/j.jag.2015.01.003>

Houborg, R., M. McCabe, A., Cescatti, F. Gao, M. Schull, A. Gitelson. (2015). Joint leaf chlorophyll content and leaf area index retrieval from Landsat data using a regularized model inversion system (REGFLEC), *Remote Sensing of Environment*, 159, 203–221, <http://dx.doi.org/10.1016/j.rse.2014.12.008>

Fassnacht, F. E., S. Stenzel, A. A. Gitelson (2015). Non-destructive estimation of foliar carotenoid content of tree species using merged vegetation indices, *Journal of Plant Physiology*, 176, 210-217, <http://dx.doi.org/10.1016/j.jplph.2014.11.003>

Breunig, F.M., L. S. Galvão, J. R. dos Santos, A. A. Gitelson, Y. M. de Moura, T. S. Teles, W. Gaida. (2015). Spectral anisotropy of subtropical deciduous forest using MISR and MODIS data acquired under large seasonal variation in solar zenith angle. *International Journal of Applied Earth Observation and Geoinformation*, 35: 294–304.

Gitelson, A. A., J. A. Gamon. (2015). The need for a common basis for defining light-use efficiency: implications for productivity estimation, *Remote Sensing of Environment*, 156, 196–201.

Zhang, Y., L. Guanter¹, J. A. Berry, J. Joiner, C. van der Tol, A. Huete, A. Gitelson, M. Voigt, P. Köhler, (2014). Estimation of vegetation photosynthetic capacity from space-based measurements

of chlorophyll fluorescence for terrestrial biosphere models. *Global Change Biology*, doi:10.1111/gcb.12664.

Sakamoto, T., A. A. Gitelson, T. J. Arkebauer, (2014). Near real-time prediction of U.S. corn yields based on time-series MODIS data, *Remote Sensing of Environment*, 147, 219–231.

Nguy-Robertson, A. L., Y. Peng, A. A. Gitelson, T. J. Arkebauer, A. Pimstein, I. Herrmann, A. Karnieli, D. C. Rundquist, D. J. Bonfil. (2014). Estimating green LAI in four crops: Potential of determining optimal spectral bands for a universal algorithm, *Agricultural and Forest Meteorology*, 192-193: 140-148.

Gitelson, A. A., Y. Peng, K. F. Huemmrich. (2014). Relationship between fraction of radiation absorbed by photosynthesizing maize and soybean canopies and NDVI from remotely sensed data taken at close range and from MODIS 250 m resolution data, *Remote Sensing of Environment*, 147, 108–120; <https://doi.org/10.1016/j.rse.2014.02.014>.

Rundquist, D. C., A. A. Gitelson, B. Leavitt, A. Zygielbaum, R. Perk, G. P., Keydan. (2014). Elements of an Integrated Phenotyping System for Monitoring Crop Status at Canopy Level, *Agronomy*, 4(1), 108-123; doi:10.3390/agronomy4010108.

Gitelson, A. A., Y. Peng, T. J. Arkebauer, J. Schepers. (2014). Relationships between gross primary production, green LAI, and canopy chlorophyll content in maize: Implications for remote sensing of primary production, *Remote Sensing of Environment* 144, 65–72.

Moses, W.J., A.A. Gitelson, S. Berdnikov, J. H. Bowles, V. Povazhnyi, V. Saprygin, E. J. Wagner, and K. W. Patterson. (2014). HICO-Based NIR-red Models for Estimating Chlorophyll-a Concentration in Productive Coastal Waters, *IEEE Geoscience and Remote Sensing Letters*. 11(6), 1111-1115. DOI 10.1109/LGRS.2013.2287458.

Rossini, M., Migliavacca, M., Galvagno, M., Meroni, M., Cogliati, S., Cremonese, E., Fava, F., Gitelson, A., Julitta, T., Morra di Cella, U., Siniscalco, C., Colombo, R. (2014). Remote estimation of grassland gross primary production during extreme meteorological seasons. *International Journal of Applied Earth Observation and Geoinformation*, 29, 1-10.

Houborg, R., Cescatti, A., and A.A. Gitelson. (2013). Integrating satellite retrieved leaf chlorophyll into land surface models for constraining simulations of water and carbon fluxes, *Geoscience and Remote Sensing Symposium (IGARSS)*, 21-26 July 2013, Melbourne, VIC, pp. 2129 – 2132, DOI: 10.1109/IGARSS.2013.6723234

Nguy-Robertson, A., Gitelson, A.A., Peng, Y., Walter-Shea, E., Leavitt, B., and T. Arkebauer. (2013). Continuous Monitoring of Crop Reflectance, Vegetation Fraction, and Identification of Developmental Stages Using a Four Band Radiometer, *Agronomy Journal*, 105: 1769–1779.

Schlemmer, M., Gitelson, A.A., Schepers, J., Ferguson R., Peng Y., Shanahan, J., Rundquist, D.C. 2013. Remote estimation of nitrogen and chlorophyll contents in maize at leaf and canopy levels, *International Journal of Applied Earth Observation and Geoinformation* 25, 47–54.

Gitelson, A.A. 2013. Remote estimation of crop fractional vegetation cover: the use of noise equivalent as an indicator of performance of vegetation indices, *International Journal of Remote Sensing*, 1-13, DOI: 10.1080/01431161.2013.793868.

Peng, Y., Gitelson, A.A., T Sakamoto. 2013. Remote estimation of gross primary productivity in crops using MODIS 250 m data, *Remote Sensing of Environment*, 128: 186-196.

Clevers, J.G.P.W., Gitelson, A.A., 2013. Remote estimation of crop and grass chlorophyll and nitrogen content using red-edge bands on Sentinel-2 and -3, *International Journal of Applied Earth Observation and Geoinformation*, 23, 344-351.

Guindin-Garcia, N., A.A. Gitelson, T. J. Arkebauer, J. Shanahan, A. Weiss. 2012. An Evaluation of MODIS 8 and 16 day composite products for monitoring maize green leaf area index, *Agricultural and Forest Meteorology*, 161: 15-25.

Ciganda, V. S., A. A. Gitelson, J. Scheper. 2012. How deep does a remote sensor sense?

Expression of chlorophyll content in a maize canopy, *Remote Sensing of Environment*, 126, 240-247.

Nguy-Robertson, A.L., A.A. Gitelson, Y. Peng, A. Viña, T.J. Arkebauer, D.C. Rundquist. 2012. Green leaf area index estimation in maize and soybean: Combining vegetation indices to achieve maximal sensitivity, *Agronomy Journal*, 104:1336-347.

Gitelson, A.A., Y. Peng, J.G. Masek, D.C. Rundquist, S. Verma, A. Suyker, J.M. Baker, J.L. Hatfield and T. Meyers. 2012. Remote estimation of crop gross primary production with Landsat data, *Remote Sensing of Environment*, 121: 404–414, doi.org/10.1016/j.rse.2012.02.017.

Bagheri, S., Rijkeboer, M., Gitelson, A. 2012. Utility of Field Spectroradiometer Data in Chlorophyll-a Estimation, *The Open Remote Sensing Journal*, 5, 90-95.

Moses, W. J., A.A. Gitelson, S. Berdnikov, V. Saprygin, V. Povazhnyi. 2012. Operational MERIS-based NIR-red algorithms for estimating chlorophyll-a concentrations in coastal waters — The Azov Sea case study, *Remote Sensing of Environment* 121: 118–124, [doi:10.1016/j.rse.2012.01.024](https://doi.org/10.1016/j.rse.2012.01.024).

Moses, W. J., A.A. Gitelson, R. L. Perk, D. Gurlin, D. C. Rundquist, B. C. Leavitt, T. M. Barrow, and P. Brakhage, 2012. Estimation of chlorophyll-a concentration in turbid productive waters using airborne hyperspectral data, *Water Research*, 46: 993-1004.

Odermatt, D., A.A. Gitelson, V.E. Brando, M. Schaepman. 2012. Review of constituent retrieval in optically deep and complex waters from satellite imagery. *Remote Sensing of Environment* 118:116–126.

Sakamoto, T., A.A. Gitelson, A. L. Nguy-Robertson, T.J. Arkebauer, B.D. Wardlow, A.E. Suyker, S.B. Verma, M. Shibayama, 2012. An alternative method using digital cameras for continuous monitoring of crop status, *Agricultural and Forest Meteorology*, 154-155: 113-126.

Sakamoto, T., Gitelson, A.A., Wardlow, B.D., Arkebauer, T.J., Verma, S.B., and Suyker, A.E., M. Shibayama. 2012. Application of day and night digital photographs for estimating maize biophysical characteristics, *Precision Agriculture*, 13: 285–301 <https://doi.org/10.1007/s11119-011-9246-1>

Peng, Y., A.A., Gitelson. 2012. Remote estimation of gross primary productivity in soybean and maize based on total crop chlorophyll content, *Remote Sensing of Environment*, 117: 440-448. [doi:10.1016/j.rse.2012.10.021](https://doi.org/10.1016/j.rse.2012.10.021).

Gitelson, A.A., Gurlin, D., Moses, W.J., and Yacobi, Y.Z., 2011. Remote Estimation of Chlorophyll-a Concentration in Inland, Estuarine, and Coastal Waters. Chapter 18 in *Advances in Environmental Remote Sensing, Sensors: Algorithms, and applications*, pp. 449-478, CRC Press, Taylor and Francis Group.

Gitelson, A.A., 2011. Non-destructive estimation of foliar pigment (chlorophylls, carotenoids and anthocyanins) contents: espousing a semi-analytical three-band model. Chapter 6 in *Hyperspectral Remote Sensing of Vegetation* (Thenkabail, P.S., Lyon, J.G., Huete, A., Eds), pp. 141-165, Taylor and Francis.

Gitelson, A.A., 2011. Remote Sensing estimation of crop biophysical characteristics at various scales. Chapter 15 in *Hyperspectral Remote Sensing of Vegetation* (Thenkabail, P.S., Lyon, J.G., Huete, A., Eds), pp. 329-358, Taylor and Francis.

Gurlin, D., Gitelson, A.A., and W.J. Moses. 2011. Remote estimation of chl-a concentration in turbid productive waters — Return to a simple two-band NIR-red model? *Remote Sensing of Environment*, 115, 3479–3490, [doi:10.1016/j.rse.2011.08.011](https://doi.org/10.1016/j.rse.2011.08.011)

Viña, A., Gitelson, A.A., Nguy-Robertson A. L., Y. Peng. 2011. Comparison of different vegetation indices for the remote assessment of green leaf area index of crops, *Remote Sensing of Environment*, 115, 3468–3478, [doi:10.1016/j.rse.2011.08.010](https://doi.org/10.1016/j.rse.2011.08.010).

Sakamoto, T., Gitelson, A.A., Wardlow, B.D., Verma, S.B., and Suyker, A.E., 2011. Estimating daily gross primary production of maize based only on MODIS WDRVI and shortwave radiation data

- Remote Sensing of Environment, 115: 3091–3101.

Féret, J-B., François, C., Gitelson, A.A., Barry, K.M., Panigada, C., Richardson, A.D., and Jacquemoud, S., 2011. Optimizing spectral indices and chemometric analysis of leaf chemical properties using radiative transfer modeling, Remote Sensing of Environment, Vol. 115, 2742-2750.

Gitelson, A. A. Gao, Bo-Cai, Li, R.R., Berdnikov, S. V., and V. Saprygin. (2011) Estimation of Chlorophyll-a Concentration in Productive Turbid Waters Using Hyperspectral Imager for the Coastal Ocean – The Azov Sea Case Study, Environ. Res. Lett., 6, 024023 (6pp), doi:10.1088/1748-9326/6/2/024023.

Peng, Y., A.A., Gitelson. 2011. Application of Chlorophyll-related Vegetation Indices for Remote Estimation of Maize Productivity, Agricultural and Forest Meteorology, 151: 1267-1276, doi:10.1016/j.agrformet.2011.05.005.

Zhang, Y., Lin, H., Chen, C., Chen, L., Zhang, B., and A.A. Gitelson. (2011) Estimation of chlorophyll-a concentration in estuarine waters: Case study of the Pearl River estuary, South China Sea, Environ. Res. Lett. 6 (2011) 024016 (9pp) doi:10.1088/1748-9326/6/2/024016.

Yacobi, Y. Z., Moses, W. J., Kaganovsky, S., Sulimani, B., Leavitt, B.C., and A. A. Gitelson. (2011) Reflectance-based algorithms for chlorophyll a estimation in inland waters: A case study at low concentrations, Water Research, 45: 2428 -2436.

Hilker, T., Gitelson, A., Coops, N.C., Hall, F.G., Black, T.A. (2011) Tracking plant physiological properties from multi-angular tower-based remote sensing, Oecologia, 165:865–876, DOI 10.1007/s00442-010-1901-0.

Peng, Y., Gitelson, A.A., Keydan, G.P., Rundquist, D.C., and W.J. Moses. (2011) Remote estimation of gross primary production in maize and support for a new paradigm based on total crop chlorophyll content, Remote Sensing of Environment, 115: 978–989, doi:10.1016/j.rse.2010.12.001.

Viña, A., and Gitelson, A.A. (2011). Sensitivity to Foliar Anthocyanin Content of Vegetation Indices Using Green Reflectance. IEEE Geoscience and Remote Sensing Letters, Vol. 8(3): 463-467.

Sakamoto, T., Wardlow, B.D., Gitelson, A.A., Verma, S.B., Suyker, A.E., and T.J. Arkebauer. (2010). A Two-Step Filtering approach for detecting maize and soybean phenology with time-series MODIS data. Remote Sensing of Environment, 114: 2146–2159.

Gilerson, A.A., Gitelson, A.A., Zhou, J., Gurlin, D., Moses, W.J., Ioannou, I., and Ahmed, S.A. (2010). Algorithms for Remote Estimation of Chlorophyll-a in Coastal and Inland Waters using Red and Near Infrared Bands. Optics Express, Vol. 18(23): 24109-24125.

Solovchenko, A.E., Chivkunova, O.B., Gitelson, A.A., Merzlyak, M.N. (2010). Non-Destructive Estimation Pigment Content, Ripening, Quality and Damage in Apple Fruit with Spectral Reflection in the Visible Range. Invited Review, Fresh Produce 4, Special Issue 1: 91-102.

Matishov, G. G., Povazhnyi, V. V., Berdnikov, S. V., Moses, W. J., and A. A. Gitelson. (2010). Satellite Estimation of Chlorophyll-a Concentration and Phytoplankton Primary Production in the Sea of Azov. Proceedings of Russian Academy of Sciences, Biological Sciences, 432: 216–219.

Moses, W. J., A. A. Gitelson, S. Berdnikov, and V. Povazhnyy. (2009). Satellite Estimation of Chlorophyll-a Concentration Using the Red and NIR Bands of MERIS—The Azov Sea Case Study. IEEE Geoscience and Remote Sensing Letters, doi:10.1109/LGRS.2009, Vol. 6(4): 845-849.

Gitelson, A. A., D. Gurlin, W. J. Moses and T. Barrow. (2009). A bio-optical algorithm for the remote estimation of the chlorophyll-a concentration in case 2 waters. Environ. Res. Lett., 4 045003 (5pp), doi:10.1088/1748-9326/4/4/045003.

Moses, W. J., A. A. Gitelson, S. Berdnikov, and V. Povazhnyy. (2009). Estimation of chlorophyll-a concentration in case II waters using MODIS and MERIS data-successes and challenges. Environ. Res. Lett., 4 045005 (8pp), doi:10.1088/1748-9326/4/4/045005.

Rundquist, D., A. Gitelson, M. Lawson, G. Keydan, B. Leavitt, R. Perk, J. Keck, D. Mishra, and S. Narumalani. (2009). Proximal sensing of coral features: spectral characterization of *Sidastrea*

siderea. *GIScience and Remote Sensing*, 2009, 46(2): 139–160. DOI: 10.2747/1548-1603.46.2.139

Zygielbaum, A.I., A. A. Gitelson, T. J. Arkebauer, and D. C. Rundquist. (2009). Non-destructive detection of water stress and estimation of relative water content in maize. *Geophys. Res. Lett.*, 36, L12403, doi:10.1029/2009GL038906.

Ustin, S. L., A.A. Gitelson, S. Jacquemoud, M. Schaepman, G. P. Asner, J. A. Gamon, and P. Zarco-Tejada. (2009). Retrieval of foliar information about plant pigment systems from high resolution spectroscopy. *Remote Sensing of Environment*, 113: S67–S77, doi:10.1016/j.rse.2008.10.019.

Gitelson, A.A., O. B. Chivkunova, and M. N. Merzlyak. (2009). Non-Destructive Estimation of Anthocyanins and Chlorophylls in Anthocyanic Leaves. *American Journal of Botany*, Vol. 96(10): 1861–1868.

Steele, M. R., A. A. Gitelson, and D.C. Rundquist. 2009. Non-Destructive Estimation of Anthocyanin Content in Grapevine Leaves. *American Journal of Enology and Viticulture*, 60: 87-92.

Ciganda, V., A.A. Gitelson, and J. Schepers. 2009. Non-destructive determination of maize leaf and canopy chlorophyll content. *Journal of Plant Physiology*, 166:157-167.

Ciganda, V., A.A. Gitelson, and J. Schepers. 2008. Vertical Profile and Temporal Variation of Chlorophyll in Maize Canopy: Quantitative “Crop Vigor” Indicator by Means of Reflectance-Based Techniques, *Agron. J.* 100:1409–1417. doi:10.2134/agronj2007.0322

Steele, M. R., A. A. Gitelson, and D.C. Rundquist. 2008. Non-Destructive Estimation of Leaf Chlorophyll Content in Grapes. *Am. J. Enol. Vitic.* 59: 299-305.

Hatfield, J.L., Gitelson, A.A., Schepers, J. S., and C.L. Walthall. 2008. Application of Spectral Remote Sensing for Agronomic Decisions, *Agron. J.* 100:S-117–S-131 (2008). doi:10.2134/agronj2006.0370c.

Gitelson, A.A. G. Dall’Olmo, W. Moses, D.C. Rundquist, T. Barrow, T.R. Fisher, D. Gurlin, and J. Holz. 2008. A simple semi-analytical model for remote estimation of chlorophyll-a in turbid waters: Validation. *Remote Sensing of Environment*, 112: 3582–3593, doi:10.1016/j.rse.2008.04.015

Feret, J.-B., François, C., Asner, G. P., Gitelson A.A., Martin, R.E., Bidet, L.P.R., Ustin, S.L., le Maire, G., and S. Jacquemoud. 2008. PROSPECT-4 and 5: Advances in the Leaf Optical Properties Model Separating Photosynthetic Pigments, *Remote Sensing of Environment*, 112: 3030-3043, doi:10.1016/j.rse.2008.02.012

Solari, F., Shanahan, J., Ferguson, R., Schepers, J., and A. Gitelson. 2008. Active Sensor Reflectance Measurements of Corn Nitrogen Status and Yield Potential, *Agron. J.* 100 (3):571–579 (2008). doi:10.2134/agronj2007.0244

Gitelson, A.A., Viña, A., Masek J.G., Verma, S. B., and A. E. Suyker. 2008. Synoptic Monitoring of Gross Primary Productivity of Maize Using Landsat Data, *IEEE Geoscience and Remote Sensing Letters*, Vol. 5, No. 2, April 2008, 10.1109/LGRS.2008.915598.

Steele, M. R., A. A. Gitelson, and D.C. Rundquist. 2008. A Comparison of Two Techniques for Non-Destructive Measurement of Chlorophyll Content in Grapevine Leaves, *Agron. J.* 100 (3):779-782 (2008). doi: 10.2134/agronj2007.0244

Gitelson, A.A., Schalles, J., Hladik, C.M. 2007. Remote chlorophyll-a retrieval in turbid productive estuarine: Chesapeake Bay case study. *Remote Sensing of Environment*, 109: 464–472.

Gitelson, A.A., Wardlow, B. D., Keydan, G. P. and B. Leavitt. 2007. An Evaluation of MODIS 250-m Data for Green LAI Estimation in Crops, *Geophys. Res. Lett.*, 34, L20403, doi:10.1029/2007GL031620.

Heiskary, S., Olmanson, L., Gitelson, A., and Chipman, J. 2006. Remote Sensing: Does It Have a Role? *LakeLine*, Spring 2006, 27-35.

Dall’Olmo, G., and A. A. Gitelson. (2006). Absorption Properties of Dissolved and Particulate Matter in Turbid Productive Inland Lakes, *Proceedings of Ocean Optics XVIII*, Montreal, Quebec,

October 9-13, 2006, pp. 1-15.

Moreno et al., An optimized payload to map vegetation photosynthesis from space, Conference: AIAA 57th International Astronautical Congress, Valencia, Spain, October 2006, pp. 2065 – 2074, DOI: 10.2514/MIAF06

Gitelson, A. A., G. P. Keydan, and M. N. Merzlyak (2006). Three-band model for noninvasive estimation of chlorophyll, carotenoids, and anthocyanin contents in higher plant leaves, *Geophys. Res. Lett.*, 33, L11402, doi:10.1029/2006GL026457.

Zimba, P. V. and A.A. Gitelson (2006), Remote estimation of chlorophyll concentration in hyper-eutrophic aquatic systems: Model tuning and accuracy optimization, *Aquaculture*, 256/1-4, June 15, pp.272-286.

Dall'Olmo, G. and A. A. Gitelson, (2006). Effect of bio-optical parameter variability and uncertainties in reflectance measurements on the remote estimation of chlorophyll-a concentration in turbid productive waters: modeling results, *Applied Optics*, 20 May 2006, Vol. 45, No. 15, 3577-3592

Gitelson, A. A., A. Viña, S. B. Verma, D. C. Rundquist, T. J. Arkebauer, G. Keydan, B. Leavitt, V. Ciganda, G. G. Burba, and A. E. Suyker (2006), Relationship between gross primary production and chlorophyll content in crops: Implications for the synoptic monitoring of vegetation productivity, *J. Geophys. Res.*, 111, D08S11, doi:10.1029/2005JD006017.

Henebry, G.M., K.M. de Beurs, and A.A. Gitelson. 2005. Land surface phenologies of Uzbekistan and Turkmenistan between 1982 and 1999. *Arid Ecosystems*, 11(26-27): 25-32.

Viña, A and A.A. Gitelson. 2005. New developments in the remote estimation of the fraction of absorbed photosynthetically active radiation in crops, *Geophys. Res. Lett.*, 32, L17403, doi:10.1029/2005GL023647.

Verma, S.B., Dobermann, A., Cassman, K.G., Walters, D.T., Johannes M. Knops, J.M., Arkebauer, T.J., Suyker, A.E., Burba, G.G., Amos, B., Yang, H., Ginting, D., Hubbard K.G., Gitelson, A.A., Walter-Shea, E.A. (2005) Annual carbon dioxide exchange in irrigated and rainfed maize-based agroecosystems, *Agricultural and Forest Meteorology*, 131: 77-96.

Gitelson, A.A., A. Viña, D.C. Rundquist, V. Ciganda, T.J. Arkebauer, 2005. Remote Estimation of Canopy Chlorophyll Content in Crops, *Geophys. Res. Lett.*, 32, L08403, doi:10.1029/2005GL022688

Dall'Olmo, G., Gitelson, A.A., Rundquist, D.C., Leavitt, B., Barrow, T., and Holz, J.C. (2005). Assessing the potential of SeaWiFS and MODIS for estimating chlorophyll concentration in turbid productive waters using red and near-infrared bands, *Remote Sensing of Environment*, Vol. 96: 176-187.

Dall'Olmo, G., and A. A. Gitelson. (2005). Effect of bio-optical parameter variability on the remote estimation of chlorophyll-a concentration in turbid productive waters: experimental results, *Applied Optics*, Vol. 44, No. 3, 20 January 2005, 412-422. (Correction)

Merzlyak, M.N., Solovchenko, A.E., Smagin, A.I., and Gitelson A.A. (2005). Apple Flavonoids During Fruit Adaptation to Solar Radiation: Spectral Features and technique for Non-destructive Assessment, *Journal of Plant Physiology*, Vol. 162, No. 2, pp. 151-160.

Henebry, G.M., Viña, A. and Gitelson, A.A. (2005). The Wide Dynamic Range Vegetation Index and its Potential Utility for Gap Analysis, *Gap Analysis Program Bulletin*, No. 12, 25-27.

Viña, A., Henebry, G. M., and Gitelson A. A., (2004). Satellite Monitoring of Vegetation Dynamics: Sensitivity Enhancement by the Wide Dynamic Range Vegetation Index, *Geophys. Res. Lett.*, Vol. 31, L04503, doi:10.1029/2003GL019034, 2004.

Gitelson, A. A. Wide Dynamic Range Vegetation Index for Remote Quantification of Crop Biophysical Characteristics. *Journal of Plant Physiology*, Vol. 161, 165-173, 2004.

Viña, A., Gitelson, A.A., Rundquist, D.C., Keydan, G., Leavitt, B., and Schepers, J. Monitoring

- Maize (*Zea mays* L.) Phenology with Remote Sensing, *Agronomy Journal*, Vol. 96, 1139-1147, 2004.
- Kogan, F., Stark, R., Gitelson, A., Jargalsaikhan, L., Dugrajav, C., and S. Tsooj. 2004. Derivation of pasture biomass in Mongolia from AVHRR-based vegetation health indices. *Int. J. Remote Sensing*, Vol. 25, No. 14, 2889-2896,.
- Rundquist, D., Perk, R., Leavitt, B., Keydan, G., and A. Gitelson. Collecting spectral data over cropland vegetation using machine-positioning versus hand-positioning of the sensor, *Computers and Electronics in Agriculture*, Vol. 43, Issue 2, May 2004, 173-178, 2004.
- Dall'Olmo, G., A. A. Gitelson, and D. C. Rundquist, (2003). Towards a unified approach for remote estimation of chlorophyll-a in both terrestrial vegetation and turbid productive waters, *Geophys. Res. Lett.*, 30(18), 1938, doi:10.1029/2003GL018065, 2003.
- Merzlyak, M. N., A. A. Gitelson, O. B., A. E. Solovchenko, S. I. Pogosyan, 2003. Application of Reflectance Spectroscopy for Analysis of Higher Plant Pigments. *Russian Journal of Plant Physiology*, 50 (5): 704-710.
- Gitelson, A. A., S. B. Verma, A. Vina, D. C. Rundquist, G. Keydan, B. Leavitt, T. J. Arkebauer, G. G. Burba, and A. E. Suyker, 2003. Novel technique for remote estimation of CO₂ flux in maize, *Geophys. Res. Lett.*, 30(9), 1486, doi:10.1029/2002GL016543.
- Gitelson, A. A., A. Viña, T. J. Arkebauer, D. C. Rundquist, G. Keydan, and B. Leavitt, 2003. Remote estimation of leaf area index and green leaf biomass in maize canopies, *Geophys. Res. Lett.*, 30(5), 1248, doi:10.1029/2002GL016450, 2003.
- Iluz, D., Y. Yacobi and A. Gitelson, 2003. Adaptation of an algorithm for chlorophyll-a estimation by optical data in the oligotrophic Gulf of Elat, *International Journal of Remote Sensing*, Vol. 24, No. 5, 1157-1163.
- Merzlyak, M. N., A. E. Solovchenko and A. A. Gitelson. 2003. Reflectance spectral features and non-destructive estimation of chlorophyll, carotenoid and anthocyanin content in apple fruit, *Postharvest Biology and Technology*, 27, 197-211.
- Gitelson, A.A., Gritz, U. and Merzlyak M.N. 2003. Relationships between leaf chlorophyll content and spectral reflectance and algorithms for non-destructive chlorophyll assessment in higher plant leaves. *J Plant Physiol*, Vol. 160, No 3, 271-282.
- Kogan, F., Gitelson, A., Zakarin, E., Spivak, L., and L. Lebed, 2003. AVHRR-based spectral vegetation index for quantitative assessment of vegetation state and productivity: calibration and validation, *Photogrammetric Engineering and Remote Sensing*, Vol. 69, No. 8, August 2003, 899-906.
- Gitelson, A.A., Stark, R, Grits, U., Rundquist, D., Kaufman, Y. and D. Derry. 2002. Vegetation and soil lines in visible spectral space: a concept and technique for remote estimation of vegetation fraction. *International Journal of Remote Sensing*, vol. 23, No. 13, 2537-2562.
- Gitelson, A.A., Zur, Y., Chivkunova, O.B. and Merzlyak, M.N. 2002. Assessing Carotenoid Content in Plant Leaves with Reflectance Spectroscopy, *Photochemistry and Photobiology*, 75(3), 272-281.
- Gitelson A.A.; Kaufman Y.J.; Stark R.; Rundquist D., 2002. Novel algorithms for remote estimation of vegetation fraction, *Remote Sensing of Environment*, 80, 76-87.
- Chivkunova, O. B., A. E. Solovchenko, S. G. Sokolova, M. N. Merzlyak, I. V., Reshetnikova, A. A. Gitelson. (2001). Reflectance Spectral Features and Detection of Superficial Scald-induced Browning in Storing Apple Fruit. *J. Russian Phytopathol. Soc.* Vol. 2, 2001: 73-77.
- Gitelson, A.A., Merzlyak, M.N., and Chivkunova, O.B. 2001. Optical properties and non-destructive estimation of anthocyanin content in plant leaves, *Photochemistry and Photobiology*, 74(1), 38-45.
- Yacobi, Y.Z. and A.A. Gitelson 2000. Simultaneous remote measurement of chlorophyll and total seston in productive inland waters. *Verh. int. Ver. Limnol.* 27: 2983-2986.

Stark, R., A. Gitelson, U. Grits, D. Rundquist, and Y. Kaufman. 2000. New Technique for Remote Estimation of vegetation fraction: principles, algorithms and validation. *Aspects of Applied Biology*, 60: 241-246.

Gitelson, A., Y. A. Grits, D. Etzion, Z. Ning, and A. Richmond, 2000. Optical properties of *Nannochloropsis* sp and their application to remote estimation of cell mass, *Bioengineering and Biotechnology*, No. 5, 69:516-525.

Gitelson, A.A., Yacobi, Y.Z., Schalles, J.F., Rundquist, D. C., Han, L. Stark, R. and Etzion, D. 2000. Remote estimation of phytoplankton density in productive waters, *Arch. Hydrobiol.Spec. Issues Advanc. Limnol.*, Vol. 55:121-136.

Schmidt, H., and A. Gitelson, 2000. Temporal and Spatial Vegetation Cover Changes in Israeli Transition Zone: AVHRR-based Assessment of Rainfall impact, *International Journal of Remote Sensing*, 21: 997-1010.

Gitelson, A., and H. Schmidt, 1999. Monitoring Vegetation Dynamics in Israeli Transition Zone with Advanced Very High Resolution Radiometer Data, *Journal of Arid Land Studies*, No 4, 9:267-276.

STOLL, M.-P., T. LAURILA, B. CUNIN, A. GITELSON, H.K. LICHTENTHALER, and T. HÄME: FLEX-Fluorescence Explorer – a space mission for screening vegetated areas in the Fraunhofer lines. 1999. In: *Proceed. of EUROPTO Conference „Remote Sensing for Earth Science, Ocean and Sea Ice Applications“*, Florence 20-24 Sept. 1999, Europto Series, SPIE, Vol. 3868, 108-119.

Gitelson, A.A., Buschmann, C, and H.K. Lichtenthaler, 1999, The chlorophyll Fluorescence Ratio F735/F700 as an Accurate Measure of the Chlorophyll Content in Plants, *Remote Sensing of Environment*, Vol. 69: 296-302.

Gitelson, A.A., Schalles, J.F., Rundquist, D.C. Schiebe, F. R. Yacobi, Y.Z., 1999. Comparative reflectance properties of algal cultures with manipulated densities, *J. Applied Phycology*, Vol. 11, No. 4, 345-354.

Merzlyak, M.N., Gitelson, A.A., Chivkunova, O.B. and Y.R. Rakitin, 1999, Non-destructive optical detection of pigment changes during leaf senescence and fruit ripening, *Physiologia Plantarum*, 106:135-141.

Gitelson, A., Stark, R., Dor, I., Michelson, O., Yacobi, Y.Z. 1999. Optical Characteristics of the Phototroph *Thiocapsa roseopersicina* and Implications for Real-Time Monitoring of the Bacteriochlorophyll Concentration, *Applied and Environmental Microbiology*, Aug. 1999, Vol. 65, No. 8, pp. 3392-3397.

Merzlyak, M.N., Gitelson, A.A., Pogosyan, S.I., Lekhimena, L and Chivkunova, O.B. 1998, Light-induced pigment degradation in leaves and ripening fruits studied in situ with reflectance spectroscopy, *Physiologia Plantarum*, 104:661-667.

Gitelson, A., and Y. Kaufman, 1998. MODIS NDVI Optimization to Fit the AVHRR Data Series - Spectral Considerations. *Remote Sensing of Environment*, Vol. 66, No. 3, 343-350.

Gitelson, A., Kogan, F., Zakarin, E., Spivak, L., and L. Lebed, 1998, Using AVHRR Data for Quantitative Estimation of Vegetation Conditions: Calibration and Validation. *Advances in Space Research*, Vol. 22, No. 5, 673-676.

Gitelson, A., and Merzlyak, M. 1998. Remote Sensing of Chlorophyll Concentration in Higher Plant Leaves, *Advances in Space Research*, Vol. 22, No. 5, 689-692.

Gitelson, A., Buschmann, C, and H.K. Lichtenthaler, 1998, Chlorophyll Fluorescence Corrected for Re-absorption by Means of Absorption and Reflectance Measurements, *J. Plant Physiology*, Vol. 152, No. 2/3, March 1998, 283-296.

Schalles, J.F., Gitelson, A., Yacobi, Y.Z., and A.E. Kroenke, 1998, Estimation of chlorophyll a from time series measurements of high spectral resolution reflectance in an eutrophic lake, *J.*

Phycology, Vol. 34, April 1998, 383-390.

Gitelson, A.A., Stark, R., and I. Dor, 1997, Quantitative near-surface remote sensing of wastewater quality in oxidation ponds and reservoirs: A case study of the Naan system, *Water Environment Research*, Vol. 69, No. 7, pp. 1263-1271.

Lichtenthaler, H. K., O. Wenzel, C. Buschmann, A. Gitelson, (1998). Plant Stress Detection by Reflectance and Fluorescence, *Annals of the New York Academy of Sciences*, 851: 271–285. doi:10.1111/j.1749-6632.1998.tb09002.x

Merzlyak, M.N. Gitelson, A.A., Pogosyan, S.I., Chivkunova, O.B., Lehimena, L., Garson, M., Buzuikova, N.P., Shevyreva, V.V., and V.B. Rurnyantseva, 1997, Reflectance Spectra of Leaves and Fruits During Their Development and Senescence and Under Stress, *Russian. J. Plant Physiology*, Vol. 44, No.5, pp. 614-622.

Gitelson, A., and Merzlyak, M. 1997. Remote Estimation of Chlorophyll Content in higher Plant Leaves. *Int. J. Remote Sensing*, No 12, 18: 291-298.

Gitelson, A., G., Y.Z. Yacobi, A., Karnieli, and N. Kress. 1996. Reflectance spectra of polluted marine waters in Haifa Bay, Southeastern Mediterranean. Features and application for remote estimation of chlorophyll concentration. *Isr. J. Earth Sci.* 45, pp. 127-136.

Mittenzwey, K.-H, Reuter, R. and A. Gitelson, 1996. Analysis of Dissolved Humic Substances in Eutrophic Waters Using the Fluorescence of Natural Samples: Calculations and Experiments. *Int. Revue ges. Hydrobiol.* Vol. 81, No. 1, pp. 1-12.

Gitelson, A., Qiuang, Hu and Richmond, A. 1996. Photic volume in Photoreactors Supporting Ultrahigh Population Densities of the Photoautotroph *Spirulina platensis*. *Applied and Environmental Microbiology*, May 1996, Vol. 62(5): 1570-1573.

Gitelson, A., Kaufman, Y., and Merzlyak, M. 1996. Use of a Green Channel in Remote Sensing of Global Vegetation from EOS-MODIS. *Remote Sensing of Environment*, Vol. 58, 289-298.

Oron, G. and Gitelson, A. 1996. Real-time Quality Monitoring by Remote Sensing of Contaminated Water Bodies: Waste Stabilization Pond Effluent. *Water Research*, Vol. 30 (12): 3106-3114.

Lichtenthaler, H., Gitelson, A. and Lang, M. 1996. Non-destructive determination of chlorophyll content of leaves of a green and an aurea mutant of tobacco by reflectance measurements. *J. Plant Physiol.*, 148: 483-493.

Gitelson, A., Karnieli, A., Goldman, N, Yacobi, Y., and Mayo, M. 1996. Chlorophyll estimation in the Southeastern Mediterranean using CZCS images: adaptation of an algorithm and its validation. *J. Marine Systems*, Vol. 9: 283-290.

Gitelson, A. Merzlyak, M. and H. Lichtenthaler. 1996. Detection of red edge position and chlorophyll content by reflectance measurements near 700 nm. *J. Plant Physiol.*, 148: 501-508.

Gitelson, A. and Merzlyak, M. 1996. Signature analysis of leaf reflectance spectra: algorithm development for remote sensing of chlorophyll. *J. Plant Physiol.*, 148: 495-500.

Gitelson, A., Laorawat, S., Keydan, G., and Vonshak, A., 1995. Optical properties of dense algal cultures outdoors and its application to remote estimation of biomass and pigment concentration in *Spirulina platensis*. *J. Phycology*, No. 5, Vol. 31: 828-834.

Yacobi, Y., Gitelson, A., and Mayo, M., 1995. Remote sensing of chlorophyll in Lake Kinneret using high spectral resolution radiometer and Landsat Thematic Mapper: Spectral features of reflectance and algorithm development. *J. Plankton Research*, No. 11, Vol. 17: 1-19.

Merzlyak, M. and Gitelson, A., 1995. Why and what for the leaves are yellow in autumn? On the interpretation of optical spectra of senescing leaves (*Acer platanoides* L.) *J. Plant Physiol.* 145 (3): 315-320.

Mayo, M., Gitelson, A., Yacobi, Y., and Z. Ben-Avraham, 1995. Chlorophyll distribution in lake Kinneret determined from Landsat Thematic Mapper data. *Int. J. Remote Sensing*, No. 1, Vol. 16:

175-182.

Gitelson, A.A. and M. Merzlyak, 1994. Spectral reflectance changes associated with autumn senescence of *Asculus hippocastanum* and *Acer platanoides* leaves. Spectral features and relation to chlorophyll estimation. J. Plant Physiol. 143: 286-292, [https://doi.org/10.1016/S0176-1617\(11\)81633-0](https://doi.org/10.1016/S0176-1617(11)81633-0).

Kaufman, Y., Gitelson, A., Karnieli, A., Ganor, E., Fraser, R.S., Nakajima, T., Mattoo, S. and Holben, B. 1994. Size distribution and scattering phase function of aerosol particles retrieved from sky brightness measurements. J. Geophysical Research, No. 10, Vol. 99: 341-356.

Gitelson, A., and M. Merzlyak, 1994. Quantitative estimation of chlorophyll-a using reflectance spectra: experiments with autumn chestnut and maple leaves. J. Photochem. Photobiol. B: Biol., 22: 247-252.

Gitelson, A.A, M. Mayo, Y.Z. Yacobi, A.S. Parparov, and T. Berman, 1994. The use of high spectral resolution radiometry data for detection of low chlorophyll concentration in lake Kinneret. Journal of Plankton Research, Vol. 16: 995-1002.

Mayo, M., Karnieli, A., Gitelson, A., and Z. Ben-Avraam, 1993. Determination of Suspended Sediment Concentrations from CZCS data. Photogrammetric Engineering & Remote Sensing, No. 8, Vol. 59: 1265-1269.

Karnieli, A., Mayo, M., Gitelson, A., and Z. Ben-Avraam, 1993. Settlements in the Nile Delta System. Terra, 2: 49-50.

Gitelson, A., F. Szilagyi, and K. Mittenzway, 1993, Improving Quantitative Remote Sensing for Monitoring of Inland Water Quality. Water Research, No. 7, pp. 1185-1194.

Gitelson, A., Garbuzov, G., Szilagyi, F., Mittenzwey, K-H., and Karnieli, A., 1993, Quantitative Remote Sensing Methods for Real-time Monitoring Inland Water Quality, Int. J. of Remote Sensing, Vol. 14: 1269-1295.

Gitelson, A., 1993, Algorithms for Remote Sensing of Phytoplankton Pigments in Inland Waters, Advances in Space Research, Vol. 13(5): 197-(5)201.

Mittenzwey, K-H., Ullrich, S., Gitelson, A., Kondrat'ev, K., 1992, Determination of Chlorophyll-a of Inland Waters on the Basis of Spectral Reflectance, Limnology and Oceanography, Vol. 37(1): 147-149.

Gitelson, A., 1992, The peak near 700 nm on reflectance spectra of algae and water: relationships of its magnitude and position with chlorophyll concentration, Int. J. Remote Sensing, Vol. 13(17): 3367-3373.

Gitelson, A. and K. Kondrat'ev, 1991, Peak Near 700 nm in Reflectance Spectrum of Productive Waters and its Application for Remote Monitoring of Water Quality, Transactions of the USSR Academy of Sciences: Earth Science, Vol. 306: 1-4.

Gitelson, A., and K. Kondrat'ev, 1991. Optical models of Mesotrophic and Eutrophic Waters, Int. Journal of Remote Sensing, Vol. 12(3): 373-385.

Mittenzwey, K.-H., S. Breitvieser, J. Penig, A. Gitelson, G. Dubovitzkii, G. Garbusov, S. Ullrich, V. Vobach and A. Muller. 1991. Fluorescence and reflectance measurements for in-situ determination of some parameters of surface water quality, Acta Hydrochim. Hydrobiol. Vol. 19(1): 3-15.

Vasilkov, A., and A. Gitelson, 1990. Spectral behavior of the light scattering coefficient of absorbing organic hydrosol, Izvestiya, Atmospheric and Oceanic Physics, Vol. 24(12): 1315-1324.

Gitelson, A., G. Garbuzov, and G. Keydan, 1990. The techniques for remote monitoring of inland waters quality, Hydro-chemical data, vol. Methods and devices monitoring inland waters, Vol. L: 12-34.

Gitelson, A., G. Garbuzov, L. Lopatchenko, K-H. Mittenzwey, and A. Makhotenko, 1990. Schnellmethoden zur Ermittlung der Beschaffenheit von Oberflächengewässern mittels Spektrometrie, Acta Hydrochim. Hydrobiol. Vol. 18(4): 397-408.

Gitelson, A., G. Dubovitskiy, and K.-H. Mittenzwey, 1990. Grundlagen experimente zur laser sondierung von inlandgewassern, Acta Hydrochim. Hydrobiol. Vol. 18(5): 537-546.

Gitelson, A., and G. Keydan, 1990. Remote sensing of inland waters quality: Measurements in the visible spectrum, Acta Hydrophys. Vol. 34(1): 5-27.

Gitelson, A., Kondratyev, K. Y. 1989. Mechanism producing the near-700nm brightness peak in the emission spectra of water bodies and its possible applications in remote sensing. Transactions Doclady of the U.S.S.R. Academy of Sciences, Earth Science Sections, Vol. 306, January 1991. Russian original dated May-June 1989.