

Curriculum Vitae – Guillaume Tcherkez



Present position: **Head Professor**
Affiliation: **University Paris-Sud (France)**
Present research unit: **Institute of Plant Biology**
Main distinction: **Bronze Medal of the French National Center for Scientific Research (CNRS)**
Date of birth: 5 Dec 1976; Nationality: French.

Fields of interest

- Isotopic composition of plants (^{13}C , ^{15}N , ^2H , ^{18}O , ^{34}S)
- Carbon and nitrogen metabolism
- Plant metabolomics and fluxomics
- Plant carbon balance
- Biochemical mechanisms

Present position

Head Professor at the University Paris-Sud (France) since 2008.

Referees (if needed)

- Prof. Graham Farquhar, Research School of Biology, Australian National University, Canberra, Australia. graham.farquhar@anu.edu.au
- Prof. Jaleh Ghashghaie, Ecology Systematics Evolution, University Paris-Sud, Orsay, France. jaleh.ghashghaie@u-psud.fr
- Prof. Howard Griffiths, Plant Science, University of Cambridge, Cambridge, UK. hg230@hermes.cam.ac.uk

I. Appointments (chronological order)

1994 *Baccalaureat* with the speciality Natural Sciences and Mathematics (type D)

1997 Selected at the *Ecole Normale Supérieure* (ENS) in Paris, with the rank #10

2000 French National *Agregation* in Life and Earth Sciences, with the rank #11

2001 Master in Ecology (rank #2) and 3rd *Magisterium* degree in Biology-Biochemistry (ENS)

2004 PhD thesis (University Paris-Sud 11). Title: An isotopic study of dark respiration and storage use in leaves of *Phaseolus vulgaris* L. Supervisor: Jaleh Ghashghaie

2004-2005 Post-doc at the Australian National University (Canberra, Australia) through an *Endeavour Fellowship* of the Australian Government (half-time)

2005 Lecturer, University Paris-Sud 11, at the Ecology Systematics Evolution (CNRS UMR 8079)

2007 Habilitation to supervise research works (HDR)

2008 Professor, University Paris-Sud, at the Institute of Plant Biology (CNRS UMR 8618)

II. National and international recognition

Invitations as a speaker (both national and international): the name, site, and date as well as the title of the presentation are given below.

- 1- Gordon conference on CO₂ fixation, from gene to biosphere, Aussois France (September 2005): *Day respiratory metabolism in illuminated leaves as revealed by ¹²C/¹³C stable isotopes.*
- 2- International conferences on isotope effects 'Isotopes', Benicassim Spain (May 2007): *Highlight on Rubisco evolution and mechanism, from isotope fractionations to kinetics.*
- 3- International conference Photosynthesis and Atmospheric Evolution, The Royal Society, London United Kingdom (November 2007): *Rubisco evolution and mechanism, from isotope fractionations to kinetics.*
- 4- Annual congress of the IFR87, Orsay France (January 2008): *Interactions between CO₂ assimilation, N assimilation and respiration.*
- 5- INRA Bordeaux, Villenave d'Ornon France (invitation by Serge Delrot), (April 2008): *On the use of stable isotopes to disentangle carbon and nitrogen primary metabolism.*
- 6- International congress on Mesophyll Conductance, Palma de Mallorca Spain (September 2008): *On the isotope effect of heavy water on mesophyll conductance.*
- 7- International congress on isotope effects 'Isotopes', Cluj-Napoca Romania (May 2009): *On the day and dark isotopic respiratory signal at the mesocosm level.*
- 8- International COMBIO meeting, Christchurch New Zealand (December 2009): *Could ¹²C/¹³C isotopes provide an integrative view of plant fluxomics?*
- 9- International SFB-symposium, München Germany (March 2010): *On the use of isotope to infer metabolic N-fluxes.*
- 10- International New Phytologist meeting, Oxford United Kingdom (April 2010): *The respiratory metabolism of illuminated leaves.*
- 11- Gordon conference on CO₂ assimilation in plants, from genes to biome, Les Diablerets Switzerland (May 2011): trip cancelled for personal health issues.
- 12- Annual meeting of the Society of Experimental Biology (Glasgow, July 2011): *Experimental evidence of phosphoenolpyruvate production from pyruvate in illuminated leaves.*

Chairing : chair of the biogeochemical session of the international meeting Isotopes 2009 (Cluj-Napoca, Romania) and 2011 (Gréoux les bains, France).

Awards and distinctions:

- 1- Post-doctoral *Endeavour fellowship* of the Department of Science, Training and Technology (DEST), Australian Government, Canberra.
- 2- The paper #6 (see the publication list) was one of the 4 nominated papers for the 'Best paper 2005 in *Functional Plant Biology*' prize
- 3- The paper #17 (see the publication list) was nominated 'Article of the week' by the journal *J Biol Chem*.
- 4- Research discovery grant for young researchers of the University Paris-Sud 11 (*Attractivity Chair*), 60 000 €
- 5- Bronze medal of the CNRS (official celebration October 2010, 22nd) for the Life Sciences field
- 6- Nominated at the national French University Institute (IUF) (1st October 2010) as a junior member.

Nomination to editorial boards:

Member of the editorial boards of *Functional Plant Biology* (from the 1st Jan. 2010) and *Plant Cell and Environment* (from the 10th Jan. 2010).

Reviewing activities:

- 1- Current referee for *Functional Plant Biology*, *Journal of Experimental Botany*, *New Phytologist*, *Plant Physiology*, *Plant Cell and Environment*, *Biochemistry*, *Plant Physiology and Biochemistry*, *Plant and Soil*, *Planta*, *Rapid Communications in Mass Spectrometry*.
- 2- Referee of ANR (French National Research Agency) projects (from Jan. 2009) and CIRAD/IRD (French bureau for the development and research in agriculture) (from 2005)
- 3- Referee of BARD projects (scientific linkage between Israel and the USA)

III. Scientific management and administrative tasks

Administration and management:

- 1- **Head of the facility** *Plateforme Métabolisme-Métabolome* of the IFR 87 confederation <http://www.pmm.u-psud.fr>. The staff of the facility includes 5 engineers and technicians and 1 quality-manager (non-permanent), annual revenues of ~50 000 €, analytical services for both the national and international research-customers (metabolomics, isotopic analyses).
- 2- **Co-direction of the group** *Metabolic Signalisation and Regulation* (4 lecturers, 1 professor, 1 research director CNRS, 1 assisting-engineer, 4 PhD students) of the Institute of Plant Biology, shared with Michael Hodges (research director CNRS) (from 1st Sept. 2009).
- 3- **Director of the teaching unit** « *Préparation à l'agrégation de sciences de la vie et de la Terre* ».
- 4- **Member of selection committees** for lecturers and professors of the University Paris-Sud 11 (*Commissions de spécialistes* now called *Comités de sélection*) (from 2006)
- 5- **Member of the selection committee** for engineers of the University Paris-Sud 11 and technicians of the CNRS (positions of type A, *Biological techniques*) (2007 and 2008)
- 6- **Member of the selection committee** of the *Ecole Normale Supérieure* (2006-2010)

Head of scientific projects:

- 1- Franco-australian project FAST (Ministry of Foreign Affairs, under contrat WC12795, 2006-2007, budget of 7 000 € for 2 years).
- 2- Transversal project of the IFR 87 confederation, *Interaction of C and N metabolism at the 2-oxoglutarate level using stable isotopes* (2006-2008, budget of 19 000 € for three years).
- 3- ANR project Young Researchers *Leaf Respiratory Isotopomics* (under contract JC08-330055, 2009-2011, budget of 175 000 € for three years)
- 4- IUF project *Interaction between respiration, photorespiration and C₁-metabolism* (2010-2015, 100 000 €).
- 5- ANR Project Young Researcher *Leaf respiration: from flux-modes to C₁ metabolism*. (2013-2015, 215 000 €).

Significant equipment funding :

- 1- Complementary funding of an LC-MS equipment (2009, 62 000 €), obtained through the Preciput ANR.
- 2- Full funding of a EA-IRMS (2011, 110 000 €), obtained through the local district (Essonne) and the Federative Research Institute.
- 3- Full funding of a NMR spectrometer (2011-2012, 395 000 €) through the Laboratory of Excellence (Saclay Plant Science) and the Paris region (Ile-de-France).

Glossary (French terms and acronyms) and abbreviations

Agrégation : national selection process for professors of the secondary school (sometimes also employed by universities). This selection is made of a succession of 7 examinations in which applicants should write down or present a lecture (5 hours preparation) on a particular subject given at the last minute, or should pass a practical examination (based on dissection of animals, microscopic observation, etc.). Due to its intrinsic difficulty, applicants that are successful but eventually do not teach in secondary schools (they may go for a PhD, for example) are allowed to keep the title “agrégés” all their life.

ANR : French National Research Agency (quite similar to the Australian Research Council).

CNRS : French National Center for Scientific Research (it is rather similar to the CSIRO).

EA-IRMS : elemental analyser coupled to an isotope ratio mass spectrometer.

Ecole Normale Supérieure (ENS) : High School (created by Napoleon at the beginning of the XIXth century) first dedicated to form teachers. Now, it is nearly equivalent to a university, with research laboratories. Entering the ENS (2 years after the *baccalauréat*) requires to pass a selection process based on several written examinations and oral presentations. In each field, 20 students only are selected at the national scale.

Habilitation to supervise research works (HDR) : in French universities, a lecturer may be authorized to supervise PhD student only if he has got the HDR. Presenting the HDR is equivalent to a “super-thesis”, with examiners and referees. Applying to Professor positions requires having the HDR.

IFR : Federative Research Institute. It is a confederation of research units (usually within the same scientific area) that should include a CNRS research lab. Ordinarily, IFRs represent up to 800 researchers/lectures/professors/engineers/technicians.

IUF : French University Institute. This Institute gathers lecturers and professors drastically selected at the national scale (regardless of their employing University). The selection is based on scientific (or literary), teaching and administrative achievements. All fields (mathematics, biology, physics, etc.) are considered as a whole, with no quota or a minimum laureate number in each field. Being nominated at the IUF means a reduction in teaching (from 192 h y⁻¹ to 64 h y⁻¹) and funds for research (20 000 euros each year for 5 years).

NMR : nuclear magnetic resonance.

IV. Achievement-Track-Record

Published papers (* quoted more than 50 times; ** 100 times; *** 150 times)

Tabulated summary (June 2013):

Number of articles	As a first author	As the last author	Number of citations	Average cit./h-index
66	26	10	1372	24.1/19

- **1. Tcherkez G, Nogués S, Bleton J, Cornic G, Badeck F, Ghashghaie J (2003)** Metabolic origin of carbon isotope composition of leaf dark-respired CO₂ in French Bean. *Plant Physiol* **131**: 237-244
- **2. Ghashghaie J, Badeck F, Lanigan G, Nogués S, Tcherkez G, Deléens E, Cornic G, Griffiths H (2003)** Carbon isotope fractionation during dark respiration and photorespiration in C₃ plants. *Phytochem Reviews* **2** : 145-161
- *3. Nogués S, Tcherkez G, Cornic G, Ghashghaie J (2004)** Respiratory carbon metabolism following illumination in intact french bean leaves using ¹²C/¹³C labeling. *Plant Physiol* **136**: 3245-3254
- *4. Tcherkez G, Farquhar GD, Badeck F and Ghashghaie J (2004)** Theoretical considerations about carbon isotope distribution in glucose of C3 plants. *Funct Plant Biol* **31**: 857-877
- **5. Badeck F, Tcherkez G, Nogués S, Piel C, Ghashghaie J (2005)** Post-photosynthetic fractionation of carbon stable isotopes between plant organs –a widespread phenomenon. *Rapid Commun Mass Spec* **19**: 1381-1391
- 6. Tcherkez G, Farquhar GD (2005)** Carbon isotope effect predictions on enzymes involved in the primary carbon metabolism of plant leaves. *Funct Plant Biol* **32**: 277-291
- 7. Tcherkez G, Cornic G, Bligny R, Gout E, Ghashghaie J (2005)** *In vivo* respiratory metabolism of illuminated leaves. *Plant Physiol* **138**: 1596-1606
- 8. Nogués S, Damesin C, Tcherkez G, Maunoury F, Cornic G, Ghashghaie J (2006)** ¹³C/¹²C isotope labeling to study leaf carbon respiration and allocation in twigs of field-grown beech trees. *Rapid Commun Mass Spectrom* **20**: 219-226.
- 9. Tcherkez G, Farquhar GD (2006)** Isotopic fractionation by plant nitrate reductase, twenty years later. *Funct Plant Biol* **33**: 531-537
- ***10. Tcherkez G, Farquhar GD, Andrews TJ (2006)** Despite slow catalysis and confused substrate specificity, all Rubiscos may be nearly perfectly optimized. *Proc Nat Acad Sci USA* **103(19)**: 7246-7251
- 11. Tcherkez G (2006)** How large is the isotope fractionation by the photorespiratory enzyme glycine decarboxylase? *Funct Plant Biol* **33**: 911-920

12. Priault P, **Tcherkez G**, Cornic G, De Paepe R, Naik R, Ghashghaie J, Streb P (2006) The lack of mitochondrial complex I in a CMSII mutant of *Nicotiana sylvestris* increases photorespiration through an increased internal resistance. *J Exp Bot* **57**: 3195-3207
13. Nogués S, **Tcherkez G**, Streb P, Pardo A, Baptist F, Bligny R, Ghashghaie J, Cornic G (2006) Respiratory carbon metabolism in the high mountain plant species *Ranunculus glacialis*. *J Exp Bot* **57**: 3837-3845
- *14. Barbour MM, Hanson DT, **Tcherkez G**, Bickford CP, McDowell NG (2007) A new measurement technique reveals rapid post-illumination changes in the carbon isotope composition of leaf-respired CO₂. *Plant Cell Environ* **30**: 469-482.
15. **Tcherkez G**, Ghashghaie J, Griffiths H (2007) Methods for improving the visualization and deconvolution of isotopic signals. *Plant Cell Environ* **30**: 887-891.
16. **Tcherkez G**, Farquhar GD (2007) On the ¹⁶O/¹⁸O isotope effect associated with photosynthetic O₂ production. *Funct Plant Biol* **34**: 1049-1052.
17. McNevin D, Badger M, Whitney S, von Caemmerer S, **Tcherkez G**, Farquhar GD (2007) Differences in carbon isotope discrimination of three variants of ribulose-1,5-bisphosphate carboxylase/oxygenase reflect differences in their catalytic mechanisms. *J Biol Chem* **282**(49): 36068-36076.
18. **Tcherkez G**, Cornic G, Bligny R, Gout E, Mahé A, Hodges M (2008) Respiratory metabolism of illuminated leaves depends on CO₂ and O₂ conditions. *Proc Nat Acad Sci USA* **105**(2): 797-802.
- *19. Gessler A, Tcherkez G, Peuke AD, Ghashghaie J, Farquhar GD (2008) Experimental evidence for diel variations of the carbon isotope composition in leaf, stem and phloem sap organic matter in *Ricinus communis*. *Plant Cell Environ* **31**: 941-953.
20. **Tcherkez G**, Farquhar GD (2008) On the effect of heavy water (D₂O) on carbon isotope fractionation in photosynthesis. *Funct Plant Biol* **35**: 201-212.
21. **Tcherkez G**, Hodges M (2008) How stable isotopes may help to elucidate primary nitrogen metabolism and its interactions with (photo)respiration in C₃ leaves. *J Exp Bot* **59**: 1685-1693. *Invited paper.*
22. Bathellier C, **Tcherkez G**, Bligny R, Gout E, Cornic G, Ghashghaie J (2009) Metabolic origin of the δ¹³C of respired CO₂ in roots of *Phaseolus vulgaris*. *New Phytol* **181**: 387-399.
23. Gessler A, **Tcherkez G**, Karyanto O, Keitel C, Ferrio JP, Ghashghaie J, Kreuzwieser J, Farquhar GD (2009) On the metabolic origin of the carbon isotope composition of CO₂ evolved from darkened light-acclimated leaves in *Ricinus communis*. *New Phytol* **181**: 374-386.
24. Cernusak LA, **Tcherkez G**, Keitel C, Cornwell WK, Santiago LS, Knohl A, Barbour MM, Williams DG, Reich PB, Ellsworth DS, Dawson TE, Griffiths HG, Farquhar GD, Wright IJ (2009) Why are non-photosynthetic tissues generally ¹³C-enriched compared

- with leaves in C₃ plants? Review and synthesis of current hypotheses. *Funct Plant Biol* **36**: 199-213.
25. Baptist F, **Tcherkez G**, Aubert S, Pontallier JY, Choler P, Nogués S (2009) C-13 and N-15 allocations of two alpine species from early and late snowmelt locations reflect their different growth strategies. *J Exp Bot* **60**: 2725-2735.
 26. Mauve C, Bleton J, Bathellier C, Lelarge-Trouverie C, Guerard F, Ghashghaie J, Tchaplal A, **Tcherkez G** (2009) Kinetic ¹²C/¹³C isotope fractionation by invertase: evidence for a small *in vitro* isotope effect and comparison of two techniques for the isotopic analysis of carbohydrates. *Rapid Commun Mass Spectrom* **23**: 2499-2506.
 27. Maunoury-Danger F, Bathellier C, Laurette J, Fresneau C, Ghashghaie J, Damesin C, **Tcherkez G** (2009) Is there any ¹²C/¹³C fractionation during starch remobilisation and sucrose export in potato tubers? *Rapid Commun Mass Spectrom* **23**: 2527-2533.
 28. Bathellier C, **Tcherkez G**, Mauve C, Bligny R, Gout E, Ghashghaie J (2009) On the resilience of nitrogen assimilation by intact roots under starvation, as revealed by isotopic and metabolomic techniques. *Rapid Commun Mass Spectrom* **23**: 2847-2856.
 29. **Tcherkez G**, Mahé A, Gauthier P, Mauve C, Gout E, Bligny R, Cornic G, Hodges M (2009) *In folio* respiratory fluxomics revealed by ¹³C isotopic labeling and H/D isotope effects highlight the non-cyclic nature of the tricarboxylic acid "cycle" in illuminated leaves. *Plant Physiol* **151**: 620-630.
 30. Meng PH, Raynaud C, **Tcherkez G**, Blanchet S, Massoud K, Domenichini S, Henry Y, Soubigou-Taconnat L, Lelarge-Trouverie C, Saindrenan P, Renou JP, Bergounioux C (2009) Crosstalks between *myo*-inositol metabolism, programmed cell death and basal immunity in *Arabidopsis*. *PloS One* **4**: article number e7364.
 31. Gauthier PG, Bligny R, Gout E, Mahé A, Nogués S, Hodges M, **Tcherkez G** (2010) *In folio* isotopic tracing demonstrates that nitrogen assimilation into glutamate is mostly disconnected from current CO₂ assimilation in illuminated leaves of *Brassica napus*. *New Phytol* **185**: 988-999.
 32. **Tcherkez G** (2010) Do metabolic fluxes matter for interpreting isotopic respiratory signals? *New Phytol* **186**: 566-568.
 33. **Tcherkez G**, Schäufele R, Nogués S, Piel C, Boom A, Lanigan G, Barbaroux C, Mata C, Elhani S, Hemming D, Maguas C, Yakir D, Badeck F, Griffiths H, Schnyder H, Ghashghaie J (2010) On the ¹³C/¹²C isotopic signal of day and night respiration at the mesocosm level. *Plant Cell Environ* **33**: 900-913.
 34. **Tcherkez G** (2011) Natural ¹⁵N/¹⁴N isotope composition in C₃ leaves: are enzymatic isotope effects informative for predicting the ¹⁵N-abundance in key metabolites? *Funct Plant Biol* **38**: 1-12.
 35. **Tcherkez G**, Mauve C, Lamothe M, Le Bras C, Grapin A (2011) The ¹³C/¹²C isotopic signal of day and night respired CO₂ in variegated leaves of *Pelargonium × hortorum*. *Plant Cell Environ* **34**(2): 290-283.

36. Gilbert A, Silvestre V, Segebarth N, **Tcherkez G**, Remaud G (2011) The intramolecular ^{13}C -distribution in ethanol reveals the influence of the CO_2 -fixation pathway and environmental conditions on the site-specific ^{13}C variation in glucose. *Plant Cell Environ* **34**(7): 1104-1112.
37. Barbour MM, Hunt JE, Kodama N, Laubach J, McSeveny M, Rogers GND, **Tcherkez G**, Wingate L (2011) Rapid changes in $\delta^{13}\text{C}$ of ecosystem-respired CO_2 after sunset are consistent with transient ^{13}C -enrichment of leaf respired CO_2 . *New Phytol* **190**(4): 990-1002.
38. Barbour MM, **Tcherkez G**, Bickford CP, Mauve C, Lamothe M, Sinton S, Brown H (2011) $\delta^{13}\text{C}$ of leaf-respired CO_2 reflects intrinsic water-use efficiency in barley. *Plant Cell Environ* **34**(5): 792-799.
39. Gilbert A, Silvestre V, Robins RJ, **Tcherkez G**, Remaud GS (2011) A ^{13}C NMR spectrometric method to determine the intramolecular $\delta^{13}\text{C}$ values in fructose from plant sucrose samples. *New Phytol* **191**(2): 579-588.
40. **Tcherkez G**, Mahé A, Hodges M (2011) $^{12}\text{C}/^{13}\text{C}$ fractionations in plant primary metabolism. *Trends Plant Sci* **16** (9): 499-506.
41. **Tcherkez G**, Mahé A, Boex-Fontvieille E, Guérard F, Gout E, Bligny R (2011) Experimental evidence of phosphoenolpyruvate production from pyruvate in illuminated leaves. *Plant Physiol* **157**: 86-97.
42. Guérard F, Petriacq P, Gakière B, **Tcherkez G** (2011) Liquid chromatography/time-of-flight mass spectrometry for the analysis of plant samples: A method for simultaneous screening of common cofactors or nucleotides and application to an engineered plant line. *Plant Physiol Biochem* **49**(10): 1117-1125.
43. Virilouvet L, Jacquemot MP, Gerentes D, Corti H, Bouton S, Gilard F, Valot B, Trouverie J, **Tcherkez G**, Falque M, Damerval C, Rogowsky P, Perez P, Noctor G, Zivy M, Coursol S (2011) The ZmASR1 protein influences branched-chain amino acid biosynthesis and maintains kernel yield in maize under water-limited conditions. *Plant Physiol* **157**: 917-936.
44. Halter D, Goulhen-Chollet F, Gallien S, Casiot C, Hamelin J, Gilard F, Schaeffer C, Carapito C, Van Dorsselaer A, **Tcherkez G**, Arsène-Ploetze F, Bertin PN (2012) In situ proteo-metabolomics revealed metabolite secretion by the acid mine drainage bioindicator, *Euglena mutabilis*. *Int Soc Microbial Ecology J (ISME Journal)* **6**: 1391-1402.
45. **Tcherkez G**, Boex-Fontvieille E, Mahé A, Hodges M (2012) Respiratory carbon fluxes in leaves. *Curr Op Plant Biol*, **15**: 308-314.
46. Pétriacq P, de Bont L, Hager J, Didierlaurent L, Mauve C, Guérard F, Noctor G, Pelletier S, Renou JP, **Tcherkez G**, Gakière B (2012) Inducible NAD overproduction in *Arabidopsis* alters metabolic pools and gene expression correlated with increased salicylate content and resistance to *Pst-AvrRpm1*. *Plant J* **70**: 650-665.

47. Gilbert A, Silvestre V, Robins RJ, Remaud G, **Tcherkez G** (2012) Biochemical and physiological determinants of intramolecular isotope patterns in sucrose from C3, C4 and CAM plants accessed by isotopic ^{13}C NMR spectrometry: a viewpoint. *Nat Prod Reports* **29**: 476-486.
48. **Tcherkez G**, Mahé A, Guérard F, Boex-Fontvieille ERA, Gout E, Lamothe M, Barbour MM, Bligny R (2012) Short term effects of CO_2 and O_2 on citrate metabolism in illuminated leaves. *Plant Cell Environ* **35**: 2208–2220.
49. Gauthier PPG, Lamothe M, Mahé A, Molero G, Nogués S, Hodges M, **Tcherkez G** (2012) Metabolic origin of $\delta^{15}\text{N}$ values in nitrogenous compounds of *Brassica napus* L. leaves. *Plant Cell Environ* **36**: 128–137.
50. Gaufichon L, Masclaux-Daubresse C, **Tcherkez G**, Reisdorf-Cren M, Sakakibara Y, Hase T, Clément G, Avice JC, Granjean O, Marmagne A, Boutet-Mercey S, Azzopardi M, Soulay F, Suzuki A (2012) Arabidopsis thaliana *Asn2* encoding asparagine synthetase is involved in the control of nitrogen assimilation and export during vegetative growth. *Plant Cell Environ* **36**: 328–342.
51. **Tcherkez G**, Guérard F, Gilard F, Lamothe M, Mauve C, Gout E, Bligny R (2012) Metabolomic characterization of the functional division of nitrogen metabolism in variegated leaves. *Funct Plant Biol* **39**: 959–967.
52. Gilbert A, Robins R, Remaud G, **Tcherkez G** (2012) Intramolecular ^{13}C -pattern in hexoses from autotrophic and heterotrophic C_3 plant tissues: causes and consequences. *Proc Natl Acad Sci USA* **109**: 18204-18209.
53. Petriacq P, De Bont L, **Tcherkez G**, Gakière B (2012) NAD: not just a pawn on the board of plant-pathogen interactions. *Plant Signalling and Behaviour* 8(1): e22477.
54. **Tcherkez G**, Bathellier C, Stuart-Williams H, Spencer W, Gout E, Bligny R, Badger M, Farquhar GD (2013) D_2O solvent isotope effects suggest uniform energy barriers in ribulose-1,5-bisphosphate carboxylase oxygenase catalysis. *Biochemistry* **52**: 869-877.
55. **Tcherkez G** (2013) Modelling the reaction mechanism of ribulose-1,5-bisphosphate carboxylase/oxygenase and consequences for kinetic parameters. *Plant Cell Environ*, in press, doi: 10.1111/pce.12066
56. Aranjuelo I, **Tcherkez G**, Molero G, Gilard F, Avice JC, Nogués S (2013) Concerted changes in N and C primary metabolism in alfalfa (*Medicago sativa*) under water restriction. *J Exp Bot* 64: 885-897.
57. Hodges M, Jossier M, Boex-Fontvieille E, **Tcherkez G** (2013) Protein phosphorylation and photorespiration. *Plant Biology* doi:10.1111/j.1438-8677.2012.00719.x.
58. **Tcherkez G** (2013) Is the recovery of (photo)respiratory CO_2 and intermediates minimal? *New Phytologist* **198**: 334-338.
59. **Tcherkez G**, Tea I (2013) $^{32}\text{S}/^{34}\text{S}$ isotope fractionation in plant sulphur metabolism. *New Phytologist*, doi: 10.1111/nph.12314.

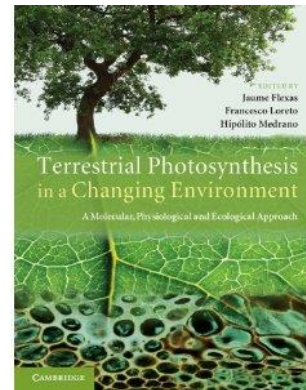
60. Boex-Fontvieille E, Gauthier P, Gilard F, Hodges M, **Tcherkez G** (2013) A new anaplerotic respiratory pathway involving lysine biosynthesis in isocitrate dehydrogenase-deficient *Arabidopsis* mutants. *New Phytologist*, in press.
61. Peuke AD, Gessler A, **Tcherkez G** (2013) Experimental evidence for diel $\delta^{15}\text{N}$ -patterns in different tissues, xylem and phloem saps of castor bean (*Ricinus communis* L.). *Plant Cell Environ*, in press.
62. Mondy S, Lenglet A, Cosson V, Pelletier S, Pateyron S, Gilard F, Scholte M, Brocard L, Couzigou JM, **Tcherkez G**, Pean M, Ratet P (2013) GOLLUM [FeFe]-hydrogenase-like proteins are essential for plant development in normoxic conditions and modulate energy metabolism. *Plant Cell Environ*, in press.
63. Ghashghaie J, **Tcherkez G** (2013) Isotope ratio mass spectrometry to follow plant metabolism. *Adv Bot Res*, in press.
64. Haïli N, Arnal N, Quadrado M, Amiar S, **Tcherkez G**, Dahan J, Briozzo P, Colas-de-Francis-Small C, Vrielynck N, Mireau H (2013) The pentatricopeptide repeat MTSF1 protein stabilizes the *nad4* mRNA in *Arabidopsis* mitochondria. *Nucl Ac Res*, in press, doi: 10.1093/nar/gkt337

Papers under provisional acceptance:

65. Coze F, Gilard F, **Tcherkez G**, Virolle MJ, Guyonvarch A (2013) Carbon-Flux distribution within *Streptomyces coelicolor* metabolism: A comparison between the actinorhodin-producing strain M145 and its non-producing derivative M1146. *Plos One*, accept major.
66. Boex-Fontvieille E, Daventure M, Jossier M, Zivy M, Hodges M, **Tcherkez G** (2013) Photosynthetic control of *Arabidopsis* leaf cytoplasmic translation initiation by protein phosphorylation. *Plos One*, accept major.

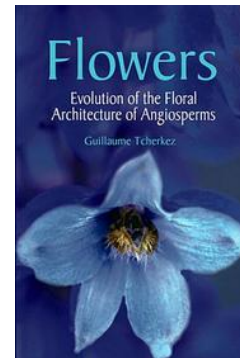
Book chapters

1. **Tcherkez G, Ribas-Carbo M** (2012) Interactions between photosynthesis and day respiration. In *Terrestrial photosynthesis in a changing environment*. Eds. J. Flexas, F. Loreto, H. Medrano. Cambridge University Press, New York. pp 41-53.



Books

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